CIC Pro™
Clinical Information Center
Service Manual

(Software Version 4)

2001099-145   Revision D

GE Medical Systems
Information Technologies

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For your notes

1 Introduction

For your notes

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Manual Information

Revision History

Each page of this manual has the document part number and revision letter at the bottom of the page. The revision letter identifies the document's update level. The revision history of this document is summarized below.

Revision	Comment
A	Initial release.
B	Changes to part numbers and descriptions for Field Replacement Units; Removal of components from BCM Server BOM. Changes to Parallel Printer configuration description. Changes to Log file utilities descriptions.
C	Added System Resource Monitor section to Maintenance chapter; added explanation of using Alt + F4 key sequence to reboot CIC Pro affected by low system resources.
D	Updated theory of operation and added Webmin Asset Management information.

Manual Purpose

This manual supplies technical information for service representatives and technical personnel so they can maintain the equipment to the assembly level. Use it as a guide for maintenance and electrical repairs considered field repairable. Where necessary the manual identifies additional sources of relevant information and technical assistance.

See the operator's manual for the instructions necessary to operate the equipment safely in accordance with its function and intended use.

Intended Audience

This manual is intended for service representatives and technical personnel who maintain, troubleshoot, or repair this equipment.

Safety Information

Responsibility of the Manufacturer

GE Medical Systems *Information Technologies* is responsible for the effects of safety, reliability, and performance only if:

- assembly operations, extensions, readjustments, modifications, or repairs are carried out by persons authorized by GE Medical Systems *Information Technologies*;
- the electrical installation of the relevant room complies with the requirements of the appropriate regulations; and
- the device is used in accordance with the instructions for use.

Intended Use

- These devices are intended for use under the direct supervision of a licensed health care practitioner.
- These devices are not intended for home use.
- Federal law restricts these devices to be sold by or on the order of a physician.
- Contact GE Medical Systems *Information Technologies* for information before connecting any devices to the equipment that are not recommended in this manual.
- Parts and accessories used must meet the requirements of the applicable IEC 60601 series safety standards, and/or the system configuration must meet the requirements of the IEC 60601-1-1 medical electrical systems standard.
- Periodically, and whenever the integrity of the device is in doubt, test all functions.
- The use of ACCESSORY equipment not complying with the equivalent safety requirements of this equipment may lead to a reduced level of safety of the resulting system. Consideration relating to the choice shall include:
  - use of the accessory in the PATIENT VICINITY; and
  - evidence that the safety certification of the ACCESSORY has been performed in accordance to the appropriate IEC 60601-1 and/or IEC 60601-1-1 harmonized national standard.
- If the installation of the equipment, in the USA, will use 240V rather than 120V, the source must be a center-tapped, 240V, single-phase circuit.

Hazard Definitions

Definitions

Warnings and cautions are used throughout this manual to designate a degree or level of hazardous situations. Hazard is defined as a source of potential injury to a person.

WARNING
A WARNING indicates a potential hazard or unsafe practice which, if not avoided, could result in death or serious injury.

CAUTION
A CAUTION indicates a potential hazard or unsafe practice which, if not avoided, could result in minor personal injury or product/property damage.

NOTE
A NOTE provides application tips or other useful information to assure that you get the most from your equipment.

Messages

WARNINGS
LOSS OF MONITORING — If the monitoring at the CIC Pro is temporarily interrupted, alternate monitoring devices or close observation should be used until the monitoring function at the CIC Pro is restored.

Indications of a loss of the monitoring function at the CIC Pro are as follows.

- RED SCREEN (RED/GRAY screen for second monitor in dual-display configured systems) indicates the CIC Pro application is restarting itself and patient monitoring at the CIC Pro is NOT occurring. The monitoring function at the CIC Pro will automatically resume. No user action is required.
- BLUE SCREEN indicates the Windows NT operating system has a functional error and patient monitoring at the CIC Pro is NOT occurring. If the CIC Pro does not automatically restart after 60 seconds, the monitoring function at the CIC Pro will not resume until you turn off the power to the CIC Pro and then turn the power back on. The monitoring function should resume in approximately 3 to 4 minutes.

Once the monitoring function at the CIC Pro has been restored, you should verify the correct monitoring state and alarm function.

WARNINGS

CIC Pro V4.0.x is NOT in-unit compatible with prior versions of CIC Pro or any version of Centralscope. Sharing of the same care unit name across central stations having incompatible software versions can result in lost or corrupted telemetry alarm defaults data and loss of audible alarms. Additionally, CIC Pro V4.0.x cannot access full-disclosure data on CIC Pro V3.x units.

(CIC Pro v4.0.7 Only) Care units running more than one CIC Pro must complete the procedure "Care Units with Multiple CIC Pros Telemetry Defaults Upgrade" **on page 3-53** after performing the upgrade procedure. Failure to perform this procedure creates a in-unit incompatibility situation which can result in lost or corrupted telemetry alarm defaults data and loss of audible alarms.

ApexPro v3.X is not compatible with prior versions of ApexPro within the same facility. If one ApexPro v3.X is installed at a facility, all ApexPro installation at the same facility must be upgraded to v3.X.

Do not exceed a maximum of 15 CIC Pros in a single logical care unit. Both hardwire and telemetry beds are limited in the number of remote view connections that can be supported. Attempting simultaneous displays of a patient monitor (bedside or telemetry) at too many CIC Pros may cause lost or intermittent communication between CIC Pros and the patient monitor. This is evidenced by NO COMM or intermittent communication conditions for the beds. The maximum CIC Pros viewing a patient monitor can vary depending on patient monitor capabilities and network design.

CAUTION

Do not load any software other than that specified by GE Medical Systems *Information Technologies* onto the CIC Pro server. Installation of software not specified by GE Medical Systems *Information Technologies* may cause damage to the server or loss or corruption of data.

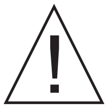
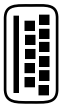
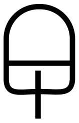
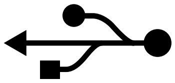
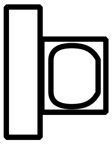
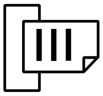
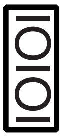
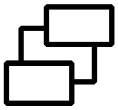
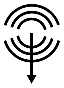
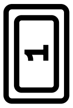
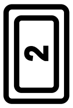
Definitions

Bold text	Indicates keys on the keyboard, text to be entered, or hardware items such as buttons or switches on the equipment.
Italic text	Indicates software terms that identify menu items, buttons, or options in various windows.

Ctrl+Esc	Indicates a keyboard operation. A (+) sign between the names of two keys indicates that you must press and hold the first key while pressing the second key once. For example, “Press **Ctrl+Esc**” means to press and hold down the **Ctrl** key while pressing the **Esc** key.
<Space>	Indicates you must press the spacebar. When instructions are given for typing a precise text string with one or more spaces, the point where the spacebar must be pressed is indicated as: **<Space>**. The purpose of the < > brackets is to ensure you press the spacebar when required.
Enter	Indicates you must press the “**Enter**” or “**Return**” key on the keyboard. Do not type “enter”.

Equipment Symbols

The following symbols appear on the CIC Pro computer.

	ATTENTION: Consult accompanying documents before using the equipment.
	KEYBOARD ICON: Denotes the keyboard port.
	MOUSE ICON: Denotes the mouse port.
	USB PORT ICON: Denotes the USB port. This port is NOT used on this system.
	VGA MONITOR ICON: Denotes the VGA monitor port. This port is NOT used on this system.
	PARALLEL (PRINTER) PORT ICON: Denotes the parallel port into which the optional laser printer is connected.
	SERIAL COMMUNICATION (COM) PORT ICON: Denotes the communication (COM) ports, used for optional service modem and optional PRN 50/PRN 50-M writer.
	ETHERNET ICON: Denotes the Ethernet ports used for the Unity Network MC, Unity Network IX, and RX network connections. The optional RX port is located on an additional Ethernet card, and is used for connection to telemetry systems, such as ApexPro.
	SPEAKER OUT ICON: Denotes the speaker port connection.
	VIDEO 1 ICON: Denotes the primary video port connection.
	VIDEO 2 ICON: Denotes the secondary video port connection.

Service Information

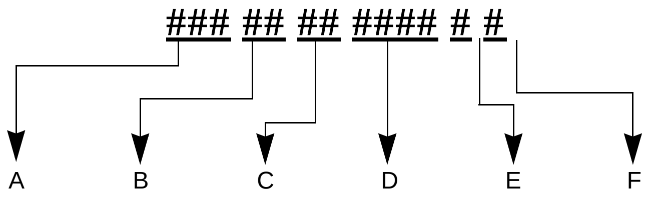
Service Requirements

Follow the service requirements listed below.

- Refer equipment servicing to GE Medical Systems *Information Technologies'* authorized service personnel only.
- Any unauthorized attempt to repair equipment under warranty voids that warranty.
- It is the user's responsibility to report the need for service to GE Medical Systems *Information Technologies* or to one of their authorized agents.
- Failure on the part of the responsible individual, hospital, or institution using this equipment to implement a satisfactory maintenance schedule may cause undue equipment failure and possible health hazards.
- Regular maintenance, irrespective of usage, is essential to ensure that the equipment is always functional when required.

Equipment Identification

Every GE device has a unique serial number for identification. A sample of the information found on a serial number label is shown below.



	Description
A	product code[1]
B	year manufactured
C	fiscal week manufactured
D	production sequence number
E	manufacturing site
F	miscellaneous characteristic

[1] The product code for the CIC Pro is AA1.

Older Unit Identification

CIC Pro versions prior to version 4.0.x use the following serial number code scheme:

D 0 XX 0005 G XX

Month Manufactured

A = January
B = February
C = March
D = April
E = May
F = June
G = July
H = August
J = September
K = October
L = November
M = December

Year Manufactured

0 = 2000
1 = 2001
2 = 2002
3 = 2003

(and so on)

Product Code

Two-character product descriptor

Product Sequence Number

Manufacturing number (of total units manufactured)

Division

F = Cardiology
G = Monitoring

Device Characteristics

One or two letters that further describe the unit, for example:
P = prototype not conforming to marketing specification
R = refurbished equipment
S = special product documented under Specials part numbers
U = upgraded unit

For your notes

2 Equipment Description

For your notes

Unity Network Description/Connection

Unity Network MC

The **Unity Network MC** (Mission Critical) network is the network that is used to connect the server systems to the monitors and to the telemetry cabinets. This network contains all the waveforms, parameters, alarms and other time-sensitive data. The CIC Pro server should be connected to the Unity Network MC backbone.

Unity Network IX

The **Unity Network IX** (Information eXchange) network is used by the network laser printer and to interconnect the server systems for license sharing. The Unity Network IX network is also used for the Full Disclosure option.

Unity Network RX

The **Unity Network RX** (Receiver eXchange) network is the connection to telemetry systems (e.g. ApexPro).

Network Connections

The following tables specify the physical location of the Unity Network connections for CIC Pro Nightshade and BCM platforms.

CIC Pro Network Connections		
Unity Network Connection	Nightshade Server	BCM Server
Unity Network MC	Ethernet Port on CPU	Ethernet Port marked “MC”
Unity Network IX	Ethernet card on back of CPU	Ethernet Port marked “IX”
Unity Network RX	Optional ethernet card on back of CPU	Optional ethernet card on back of CPU. Port is marked “RX”

Theory of Operation

CIC Pro Functional Description

The CIC Pro application is connected to the Unity Network MC network via Ethernet to provide real-time patient data and alarms for central nurses’ stations in hospitals.

The CIC Pro can display real-time waveforms and vital sign data with visual and audible alarms for up to 16 patients simultaneously. CIC Pro supports both hardwire and telemetry data.

The software allows the user to select any bed on the Unity Network MC network and to display an expanded view of that bed’s real-time parameters and waveforms. This expanded view also allows the user to view and modify settings (within the care unit) and view other patient data including alarm histories, graphic trends and tabular trends.

The user can configure the number of patients displayed by the system, and the number of displayed waveforms per patient. Waveform colors are configurable.

All configuration data is stored, and is restored after a system power cycle or software restart.

The system runs on the Microsoft Windows NT operating system (version 4.0 SP6 or later).

ApexPro Telemetry System Functional Description

The ApexPro telemetry system is connected to the Unity Network MC network via Ethernet to provide real-time patient data and alarms for central nurses’ stations in hospitals and also connects to a telemetry system via the Unity Network RX network (refer to your specific telemetry system documentation for more information).

ApexPro telemetry provides clinicians with patient physiological information while allowing for patient mobility. The physiological parameters monitored include ECG, non-invasive blood pressure, and SpO_2. This physiological information is sent to the CIC Pro for processing and display via Ethernet or the Unity Network MC network.

How Trends are Calculated

GE Medical Systems *Information Technologies* systems trend two types of physiological data: periodic and episodic.

Periodic data is constantly updated. Examples of periodic data include heart rate (HR) and blood pressure (BP). Episodic data are events that are user or system generated. Examples of episodic data include temperature (Temp) and non-invasive blood pressure (NiBP).

Periodic data is sampled every two seconds to get 30 samples per minute. The value displayed is the median of the 30 samples. Odd-number values are rounded down to the nearest even-number. The value is always the median of a one-minute time frame, regardless of the interval selected. The interval simply defines which trended data displays (i.e., five minute intervals means the trended data are one-minute samples spaced five minutes apart, NOT five-minute samples and NOT a median of the five one-minute samples from that period).

If the calibration of the system clock changes (for example, daylight savings time), the “time” for periodic data “slides” into the revised time. However, episodic data is time-stamped and retains its original time.

File/Data Handling

Log Files

Log files generated by the CIC Pro application, other associated applications and the CIC Pro operating system are used during system analysis, problem diagnosis and troubleshooting. For more information about retrieving log files, refer to the following:

- “Download Logs” on page 7-11.
- “View Logs” on page 7-16.
- “CIC Pro Log Files” on page 8-6.
- “getlog Function” on page 8-7.
- “Webmin Connection Errors” on page 8-10.
- “Capture All Logs on the CIC Pro” on page 8-19.
- “ApexPro Application Log Files” on page 8-27.

RWHAT Packets

All monitoring devices on the GE Unity Network periodically broadcast information about themselves in “RWHAT” packets. Among other things, RWHAT packets contain IP address, port number, name and offered services information about each device.

All monitoring devices listen for RWHAT packets and maintain a database of information about other devices on the network. When devices need to communicate, the appropriate IP address information is obtained from the database and Unity network protocol messages are created. The operating system services are used to transmit the message on the network.

For example, when a CIC Pro computer communicates with a telemetry device, the telemetry device’s IP address is retrieved from the CIC Pro computer’s RWHAT database. The Unity network messages are created and the operating system sends the messages to the telemetry device.

Storage

- The FD Data interface uses the Unity Network IX network to retrieve data from the database.
- Each bed is stored in separate directory, containing one index file and many record files.

Printing

- The Report printout is a configurable, long-time-period overview of waveform activity. It is activated by pressing the Report Print button on the FD display.
- The Strip printout is a quick snapshot of what is currently on the screen. It is activated by pressing the Print button while the FD tab page is being viewed.
- There is a separate FD printer selection from the main laser printer selection on the setup page. Specifying a printer here does not advertise this CIC Pro as a print server on (like the main laser selection). It is used exclusively by the local FD system. A printer must be “Added” to the NT system before it will show up in the drop-down list.

Full Disclosure

The CIC Pro Full Disclosure (FD) system stores all waveform and parametric data from a patient for up to 76 hours. This data can be randomly accessed later in a static display that looks similar to the real-time display window. To accomplish this every Unity Network waveform packet (4/sec) and every parameter packet (1 every 2 seconds) are stored to disk on the CIC Pro. In addition one RWHAT packet and one admit packet are stored every minute to help recreate the patient’s history.

Unlike an alarm history event stored by the bedside, which only stores a 10 second snap-shot surrounding the event, with Full Disclosure the user can scroll back in time prior to the event to see what was going on with the patient, leading up to the event. Each CIC Pro can handle up to 16 patients.

CAUTION

TIME CHANGES AFFECT FULL DISCLOSURE DATA — When the time is changed on the Unity MC network for spring and fall Daylight Savings Time (DST) events, CIC Pro Full Disclosure data will be affected.

- When the time is ADVANCED by one hour, the oldest hour of Full Disclosure data at the end of the FD storage file is deleted.
- When the time is set BACK one hour, the most recent hour of Full Disclosure data will is replaced with the new hour's Full Disclosure data.

Before changing the time on the Unity MC network, review the Full Disclosure information for all patients in the care unit. If there are events which should be archived, record this information BEFORE changing the time.

Behaviors/Rules

Installation

- Incompatible with CIC Pro v2.X and v3.X.
- Certain Unit Defaults are incompatible with CIC Pro v2.X and v3.X.
- Installation deletes all FD data if upgraded from v2.X/3.X to v4.X.

- Installation clears all FD slots if upgraded from v2.X/3.X to v4.X.

Hardware

- Nightshade Platform
    - FD systems have two hard drives, one dedicated to FD.
    - Non-FD systems have only one hard drive (FD storage is restricted to 1 hour/patient).
    - C: ~8GB, F: 18GB (FD).
- BCM Platform
    - Single hard drive, partitioned into two logical.
    - C: ~8GB, D: ~26GB (FD).

Start-up modes

- **Auto For All –** Automatically detects admitted beds that are not currently being FD'd anywhere and attempts to start FD on one of the CIC Pros within the unit. This works regardless of whether the bed was admitted directly at the bedside or the CIC Pro. FD cannot be stopped on a particular bed until the bed is discharged.
- **Auto If Listed –** Same as Auto For All but only if the bed in question is entered into the list on the FD Unit Defaults setup screen. All other beds are not Full Disclosed.
- **Manual Mode –** Beds are NOT automatically full disclosed upon admission. User can manually start and stop FD for a particular bed by using a button located on the Full Disclosure tab sheet. All FD data is deleted when Full Disclosure is stopped for a bed.

Licensing

- Support for up to 16 patients per CIC Pro.
- Stores 76 hours of data per patient, unless disk drive is less than 10GB (considered a non-FD machine. Nightshade servers only), then only 1 hour of data is stored.
- Stores 76 hours of data regardless of license type. Licensing controls amount of data that is viewable.
- Unit Licensing Mode sets which type of license is requested. Supported types: None (1 hour), 24, 48, 72 hours.
- Failure to obtain a license results in that bed not being FD'd (0 hours).
- Once a license is successfully obtained, if the license server is removed, access is restricted to 1 hour, until the server is returned.
- Licensing information is stored with data, so restrictions follow data regardless of where it is viewed, even if viewed in a different unit with a different Unit License Mode.

Control

CIC Pro Master and Full Disclosure

NOTE

There is only one “master” CIC Pro per unit (with respect to FD). The CIC Pro with the lowest IP address is the master.

The CIC Pro master wakes up every minute to perform the following activities:

- Detects admitted (but not FD'd) beds within the unit for Auto modes.
- Assigns beds (to be FD'd) to CIC Pros within the unit.
- Applies Multi-FD and Twin-Bed Rules.
- Uses the FDSvr process to find the "FULL DISCLO" service, identifying CIC Pros with FD ability. The "FULL DISCLO" service is used by the CIC Pro master while searching for other CIC Pros to query, control & assign beds.

  NOTE

  The CIC Pro master checks the versions of the other CIC Pros before trying to identifying CIC Pros with FD ability. Versions earlier than 2.5 are ignored.

- Uses the LocateFD service (provided by FDSvr) to guarantee that the right CIC Pro is contacted if retrieving data while a multi-FD condition is occurring.

NOTE

A CIC Pro will NOT act as master during first minute after start-up. Instead, the latest data is first collected from the other CIC Pros on the network, and this data determines which CIC Pro becomes master. Multiple masters on a network might occur, but only briefly--this will self-correct within a couple of minutes.

Minute Rule/Offline Storage Setting

(see "Offline Storage" on page 3-36)

The Offline Storage Setting determines the length of time the CIC Pro will maintain FD data for a bed from which it has stopped receiving data (a NO COMM condition).

- If the NO COMM condition ends WITHIN the Offline Storage setting time frame, FD for the bed continues.
- If a NO COMM condition exceeds the Offline Storage Setting time frame, all data for the bed is deleted. If (while in Auto mode) the bed comes back online (the NO COMM condition ends) after this point, the bed is reassigned as a new and different bed.
- When FD starts up on a CIC Pro, it determines when data was last received from the assigned beds.

  If the latest data for a bed:

  - IS NOT older than the Offline Storage Setting, then FD data collection continues for the bed.
  - IS older than the Offline Storage Setting, existing data associated with the bed is deleted, and a NEW data collection is started for the bed.

Multi-FD Rule

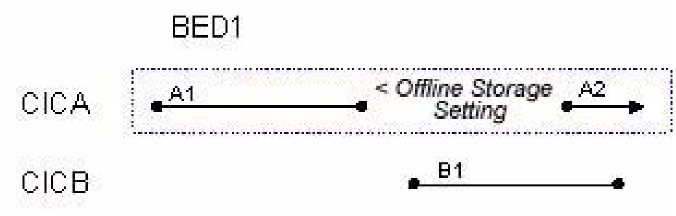
If multiple CIC Pros are running in a unit, the Multi-FD Rule allows switching of FD data collection from one CIC Pro to another if a CIC Pro goes offline (reboot, shutdown, etc.).

The following examples describe how the Multi-FD Rule works when using 2 CIC Pros (CICA and CICB).

NOTE

In the examples, start up mode is “Auto”, and only one bed (BED1) is used.

Example 1:



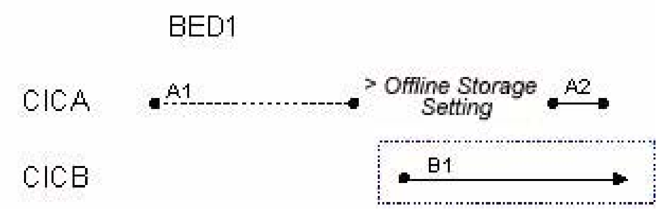
1. CICA goes offline and stops FD'ing BED1. This causes CICB to begin FD'ing BED1.

   NOTE

   The master CIC Pro detects CICA going offline, and switches FD over to CICB, within a minute of the offline event occurring.

2. CICA comes back online within the Offline Storage Setting time frame, and continues FD'ing BED1 again. At this point, CICA and CICB are BOTH FD'ing BED1.
3. The Multi-FD Rule does not allow more than one CIC Pro to FD the same bed at the same time--only the data that goes the farthest back in time (CICA) is kept. Because of this, CICA continues FD'ing BED1, and CICB stops.

Example 2:



1. CICA goes offline and stops FD'ing BED1. This causes CICB to begin FD'ing BED1.

   NOTE

   The master CIC Pro detects CICA going offline, and switches FD over to CICB, within a minute of the offline event.

2. CICA comes back online after exceeding the Offline Storage Setting time frame. Because of this, existing BED1 data is deleted from CICA, and NEW BED1 data collection begins on CICA. At this point, CICA and CICB are BOTH FD'ing BED1.
3. The Multi-FD Rule does not allow more than one CIC Pro to FD the same bed at the same time--only the data that goes the farthest back in time (CICB) is kept. Because of this, CICB continues FD'ing BED1, and CICA stops.

NOTE

At every wake-up cycle (1 minute interval), the CIC Pro master scans all CIC Pros within the unit to determine if more than one CIC Pro is FD’ing the same bed (this can happen as part of normal operation). If the master detects this condition, all CIC Pros are instructed to stop FD’ing the bed *except* for the one CIC Pro with the **oldest** data for the bed.

Combo mode (Twin-Bed Rule)

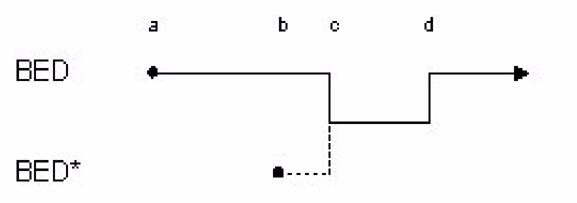
In combo mode:

1. Two beds are on the network: one is a hardwired bed, and the other is telemetry bed. Both beds share the same name (e.g. BED), but '*' is added to the name of the telemetry bed name (e.g. BED and BED*). Both beds represent the same patient. NOTE: If NOT in combo mode, these two beds would be treated as distinct and separate.
2. Only the oldest bed data is kept. Data for the other bed is deleted.
3. No matter which data is kept, FD continues, and the data is stored under the bed name, but without the '*'.
4. Combo mode is stopped (breaking combo) by discharging either bed. If this happens, FD continues on the UNDISCHARGED bed, and the data is stored under the UNDISCHARGED bed name.

   NOTE

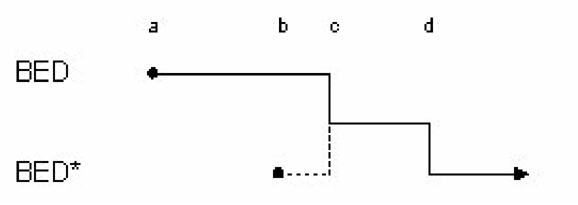
   If the hardwired bed is discharged, '*' would again be included in the name.

Combo Mode Example 1:



a. A hardwired bed BED is admitted and is FD'ed.
b. A telemetry bed BED* is admitted and is FD'ed. Two separate FD data stores exist, one for each bed (could be on different CIC Pros).
c. The two beds are put into combo mode. When this happens, BED data is kept because it is older than BED* data, and BED* data is deleted. FD continues, and the data is stored under the name BED.
d. Combo is broken by discharging BED*. FD continues, with the data is still stored under the name BED.

Combo Mode Example 2:

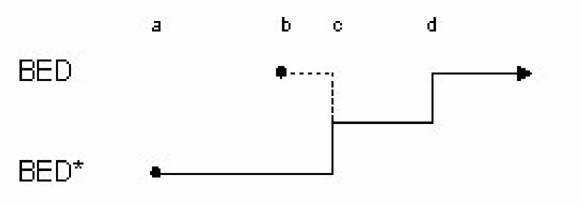


a. A hardwired bed BED is admitted and is FD'ed.
b. A telemetry bed BED* is admitted and is FD'ed. Two separate FD data stores exist, one for each bed (could be on different CIC Pros).

c. The two beds are put into combo mode. When this happens, BED data is kept because it is older than BED* data, and BED* data is deleted. FD continues, and the data is stored under the name BED.

d. Combo is broken by discharging BED. FD continues, with the data is NOW stored under the name BED*.

Combo Mode Example 3:



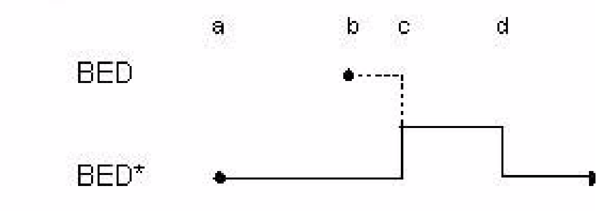
a. A telemetry bed BED* is admitted and is FD'ed.

b. A hardwire bed BED is admitted and is FD'ed. Two separate FD data stores exist, one for each bed (could be on different CIC Pros).

c. The two beds are put into combo mode. When this happens, BED* data is kept because it is older than BED data, and BED data is deleted. FD continues, and the data is stored under the name BED*.

d. Combo is broken by discharging BED*. FD continues, with the data is still stored under the name BED.

Combo Mode Example 4:



a. A telemetry bed BED* is admitted and is FD'ed.

b. A hardwired bed BED is admitted and is FD'ed. Two separate FD data stores exist, one for each bed (could be on different CIC Pros).

c. The two beds are put into combo mode. When this happens, BED* data is kept because it is older than BED data, and BED data is deleted. FD continues, and the data is stored under the name BED.

d. Combo is broken by discharging BED. FD continues, with the data is NOW stored under the name BED*.

Bed Name/IP Address Changes

The CIC Pro tracks FD data for individual beds using a combination of bed name and IP address.

If a bed name changes during FD, information within the data reflects the new name at the point the name change occurred.

If a bed IP address changes during FD, but the name does not, it is interpreted as a new and different bed, and a new FD data store is created and utilized for the new bed.

If a bed goes offline, and another bed with the same name but a different IP address comes online, it is interpreted as a new and different bed and a FD data store is created and utilized for it. However, the following conditions apply:

- If the bed that went offline (with the original IP address) comes back online within the Offline Storage Setting timeframe, the two beds continue to be treated as separate, since the different IP addresses positively identify them as distinct and separate.
- If the bed that went offline (with the original IP address) DOES NOT come back online within the Offline Storage Setting timeframe, the bed with the new IP address is interpreted as a REPLACEMENT for the bed with the original IP address. In this case, the FD data for the bed with the original IP address is deleted, and FD continues, storing data for the bed with the new IP address ONLY.

Unit Boundary

- Each unit operates independently with respect to Full Disclosure. The only interaction is when displaying data across units.
- License Mode – All beds within a unit will have access to the same amount of data storage (based on time) unless there is a failure to get a license (0 hours). Can be different across different units (i.e. UnitA-72hours, UnitB-None)(1hour).
- Start-up Mode – Same start-up rules applied to all beds within a unit.
- Default – Same FD defaults used on all CIC Pros within a unit.
- Master – One per unit.
- Acquisition/Storage – The master will only assign beds within the unit to CIC Pros within the unit. At no time will data for a bed be stored on a CIC Pro in a different unit.
- Bed Unit Changes – If a bed changes its unit name while being FD’d, all data for the bed is deleted. The unit to which the bed moved is responsible for dealing with the bed.
- CIC Pro Unit Changes – If a CIC Pro changes its unit name while FD’ing beds, all data for all beds being FD’d by that CIC Pro is deleted. The unit to which the beds belonged is responsible for dealing with those beds.

CIC Pro Service Logons

The following procedures are for entering various levels of CIC Pro software. Each logon provides a different level of accessibility. Follow these steps to logon as appropriate.

> **CAUTION**
> The bed displayed at this CIC Pro is unmonitored while the CIC Pro is shut down. Any beds admitted on this CIC Pro PC display “NO COMM” if displayed at other centrals and are not monitored.

To shut down the CIC Pro application and log on as a different user:

1. Select *Setup CIC*.
2. Select the *Service Password* tab.
3. Type **mms_com** as the Password.
4. In the command box that opens, type **stop** and then press **Enter**.
5. Click on *Start* then select *Shut Down* and *Close All Programs And Log On As Different User*.
6. Hold down **Shift** and select *Yes*.

   Continue holding until prompted for the password.
7. Choose from the following logons and continue as instructed.

Full-Access Logons

The following logons are “full-access” administrative accounts used to update software and make changes to the operating system configuration.

The two accounts are separate but similar: one for the site administrator, the other for field service personnel.

Site Administrator Logon

To logon as site administrator, complete the following when prompted for logon:

User name: type **administrator** and press **Tab.**

Password: type **admin1,3,5,7** and press **Enter**.

CIC Pro Administrator Logon

To logon as CIC Pro System Administrator, complete the following when prompted for logon:

User name: type **cicadm** and press **Tab**.

Password: type **cicadm1,3,5,7** and press **Enter**.

Limited-Access Logon

The following logon is a “limited-access” user account and should be used to review logs or restart CIC Pro.

For CIC Pro Limited Access logon, complete the following when prompted for logon:

User name: type **cicuser** and press **Tab**.

Password: type **cicuser1,3,5,7** and press **Enter**.

Run-Time Logon

The following logon is a “run time” user account and should be used to restart CIC Pro to run in the normal user interface mode.

User name: type **CIC** and press **Tab**.

Password: type **cic** and press **Enter**.

Service Mode Logon

Password: **mms_cic**

CIC Pro and ApexPro Host Components

Hardware

The system uses a PC tower with the choice of a 15-inch, 17-inch, or 20-inch color computer display. The entire system is assembled with the display choice, loaded with software, and then shipped as a complete unit ready for setup and use.

To run the system, the PC tower comes with the following internal components:

Nightshade Server (CIC Pro)

The Nightshade server includes the following hardware:

- SCSI internal hard disk drive
- CD-ROM drive
- High density floppy disk drive
- Integral video controller (one)
- 256kB DRAM video memory module
- Integral audio controller (one)
- Ethernet PCI (PC interface) plug-in circuit board (one)
- Dual CPU
- 1280 x 1024 x 65536 video card
- 16-bit sound card
- 2 external speakers
- 128 MB RAM

BCM Server (CIC Pro)

The BCM server includes the following hardware:

- SCSI internal hard disk drive
- CD-ROM drive
- High density floppy disk drive
- Integral video controller (one)
- 256kB DRAM video memory module
- Integral audio controller (one)
- Ethernet PCI (PC interface) plug-in circuit board (one)
- Single or Dual CPU
- 2560 x 1024 x 65536 dual video card (only with product code AA1)
- 16-bit sound card
- 2 external speakers
- 128 MB RAM

CIC Pro with ApexPro Telemetry System Host

The ApexPro telemetry system host includes the following hardware:

- SCSI internal hard disk drive
- CD-ROM drive
- High density floppy disk drive
- Integral video controller (one)
- 256kB DRAM video memory module
- Integral audio controller (one)
- Ethernet PCI (PC interface) plug-in circuit board (one)
- Dual CPU
- 2560 x 1024 x 65536 dual video card (only with product code AA1)
- 16-bit sound card
- 2 external speakers
- 256 MB RAM

CIC Pro IP Address Information

Display All IP Addresses

To display all the IP addresses on the Unity Network IS server subnets:

1. Click on the *Setup CIC* button.
2. Click on the *Service Password* tab.
3. Position the cursor in the *Password* field and type **mms_com**. Click on *Apply*.
4. Type **ipconfig<space>/all** and press **Enter**. The IP Configuration information appears.

   The following example is from a BCM server machine:

```
Ethernet adapter E100B4:
Description. . . . . . . . : Intel(R) PRO Adapter
Physical Address. . . . . . : 00-10-F3-03-02-7F
DHCP Enabled. . . . . . . . : No
IP Address. . . . . . . . . : 121.64.68.1 (IX)
Subnet Mask . . . . . . . . : 255.0.0.0
Default Gateway . . . . . . :

Ethernet adapter E100B3:
Description . . . . . . . . : Intel(R) PRO Adapter
Physical Address. . . . . . : 00-10-F3-03-02-80
DHCP Enabled. . . . . . . . : No
IP Address. . . . . . . . . : 126.64.68.2 (ApexPro Host)
Subnet Mask . . . . . . . . : 255.0.0.0
IP Address. . . . . . . . . : 126.64.68.1 (MC)
Subnet Mask . . . . . . . . : 255.0.0.0
Default Gateway . . . . . . :

Ethernet adapter E100B2:
Description . . . . . . . . : Intel(R) PRO Adapter
Physical Address. . . . . . : 00-50-DA-15-75-3D
DHCP Enabled. . . . . . . . : No
IP Address. . . . . . . . . : 119.1.1.2 (RX)
Subnet Mask . . . . . . . . : 255.0.0.0
Default Gateway . . . . . . :
```

5. Close the *Command Prompt* window.
6. Close the *CIC Setup* window.

NOTE

See “IP Address Configuration” on page 3-44 for IP Address configuration procedure information.

CIC Pro Network Cards

The following table displays the CIC Pro Adapter selections for the CIC Pro network cards.

CIC Pro Adaptor Selections

Unity Network/ Application	Adaptor for Nightshade Server	Adaptor for BCM Server
Unity Network MC for CIC Pro & ApexPro Host	[1] Intel EtherExpress PRO Adapter	[3] Intel (R) PRO/100+ Management Adapter
Unity Network IX	[2] 3Com Fast EtherLink XL NIC (3C905B-TX)	[4] Intel (R) PRO/100+ Management Adapter
Unity RX Network for telemetry system (e.g. ApexPro)	[3] 3Com Fast EtherLink XL NIC (3C905B-TX)	[2] Intel (R) PRO/100 S Desktop Adapter

NOTE

These adapters are listed in the Windows *Internet Protocol (TCP/IP) Properties* window.

CIC Pro Telemetry Tower Option

The TELEMETRY TOWER option includes several selections that allow new software to be loaded into a CD Telemetry®-LANTM cabinet assembly (or subsystem) through a disk drive. The software up-load process for the telemetry tower is controlled entirely through the CIC Pro system.

To upload software into the Telemetry Tower, refer to the ApexPro software upgrade instructions PN2001989-188.

WARNING

Perform software uploads according to the update instructions that accompany the software. Improper use of this option may result in loss of patient monitoring or patient data. Do NOT upload software unless instructed to do so by qualified service personnel and only after the telemetry system is properly prepared.

As part of procedure you have to reboot the tower to initiate new tower.

Make sure you notify the responsible personnel for the admitted patients (monitored by the CD Telemetry-LAN cabinet (or subsystem) that is rebooted) that the cabinet will be rebooted and they will lose patient monitoring for a few minutes.

WARNING

During the reboot period monitoring functions are lost. The buttons for the "lost" patients change on the central stations to show ADMIT. This may lead some monitoring system users to get the "lost" patients back by readmitting them. Instruct all personnel NOT to admit any of the "lost" patients during reboot. Once the cabinet finishes rebooting the "lost" patients return automatically. Note that when you activate new software, all patient histories and trends are lost.

CIC Pro Full Disclosure License Management Setup

BCM Server

Each CIC Pro with version 4.x software comes with the ability to store 16 beds of Full Disclosure (FD) data for one hour without a license. A CIC Pro with the Full Disclosure option and version 4.x software has the ability to store up to16 beds for 72 hours with the appropriate licenses and license settings.

When operating two CIC Pro servers within the same “care unit” where one has the Full Disclosure option and the other does not, it is necessary to turn Full Disclosure OFF on the CIC Pro without the Full Disclosure option to prevent a conflict with the two different storage capacities of the CIC Pro units.

Server Without Full Disclosure

A Nightshade/Omnitech platform may require a hardware modification to support anything greater than 1 hour Full Disclosure. However, for those Nightshade/Omnitech CIC Pro that do not have a **F** drive and have purchased Full Disclosure licenses within the care unit, you must perform the following steps to disable Full Disclosure on that CIC Pro.

1. Select *Setup CIC* and click on the *Service Password* tab.
2. Type **mms_com** and press the **Enter** key. The CIC command window displays.
3. Type **fdcmd -n OFF** and press the **Enter** key. Beds that were full disclosed on this PC are now deleted.
4. Type **stop**.
5. Select *Start* > *Shutdown* > *Close all programs and log on as a different user*. Allow the CIC Pro to boot up in CIC mode. Wait for at least 3 to 4 minutes.
6. Check the other CIC Pro servers on the unit to ensure the full disclosure function is still enabled somewhere on the unit
    a. Select *Setup CIC* and click on the *Service Password* tab.
    b. Type **mms_com** and press the **Enter** key. The CIC command window displays.
    c. Type **fdcmd -lu** and verify beds are now full disclosed on another CIC Pro that support >1-hour Full Disclosure storage.
    d. Type **exit** and close all open windows.

NOTE

The above procedure may be followed on any CIC Pro (BCM, Nightshade or Omnitech hardware platform).

ApexPro PTSCONFIG Utility

If the CIC Pro server includes the ApexPro option, the PTSCONFIG utility is a console application that allows you to configure the ApexPro application.

NOTE

Not all of the commands in the following table may apply to your telemetry system. If applicable, see the separate service or configuration documentation for your specific ApexPro installation for more information about using these commands with your specific telemetry system.

display Commands

The commands listed below display ApexPro application information.

display Commands

Command	displays...
help	list of available commands
display<Space>tower	ApexPro tower’s full name “UNIT|NAME”
display<Space>software	software versions for all running software (main, rack, etc.)
display<Space>build	date/time the software was built
display<Space>patient	patient information: TTX, tower, and receiver numbers
display<Space>patreceiver	information about the patient’ receiver and transmitter
display<Space>IP	IP address used by the ApexPro application to talk to the Unity Network
display<Space>rack	IP address used by the ApexPro application to talk to the telemetry system
display<Space>receiver	receiver/unit assignments for this ApexPro tower
display<Space>ttx	network-wide in-use TTX list (from the TTX master list)
display<Space>unitlist	network-wide unit/receiver list (from the TTX master list)

modify Command

The commands listed below permit modifications to the ApexPro application.

modify Command	
Command	**allows modification to...**
modify<Space>unit	ApexPro tower's unit name
modify<Space>tower	ApexPro tower's device name
modify<Space>ip	IP address used by the ApexPro application to talk to the Unity Network
modify<Space>rack	IP address used by the ApexPro application to talk to the telemetry system
modify<Space>receiver	receiver/unit assignments for this ApexPro tower

listwhat Command

For information on using the listwhat command, refer to "List Network" on page 8-24.

Other Commands

The table below lists other ApexPro software commands.

Other Commands	
Command	**function...**
admit	admits a patient on this ApexPro tower ("admit" shows usage)
discharge	discharges a patient on this ApexPro tower ("discharge" shows usage)
dload	downloads rack software ("dload" shows usage)
resetrack	immediately (with no confirmation) resets all racks connected to the tower
blink patient rack receiver stop	blinks rack LED(s) according to: entered patient name (UNIT|BED) entered ApexPro tower IP address entered ApexPro tower IP address and receiver number stop any blinking
boot	reboots the PC ("DDMM" password required: confirmation is also requested)
shutdown	restarts ApexPro application ("DDMM" password required: confirmation is also requested)

Other Commands	
Command	function...
statistics waveform wavereset histogram histreset	displays ApexPro software performance statistics: waveform data latency timing through ApexPro software reset waveform data latency timing counters waveform data timing through ApexPro software reset waveform data timing counters
storeecg	stores a file containing raw patient ECG sample data

For your notes

3

Installation & Configuration

For your notes

Pre-Installation Requirements

Read and fully understand the pre-installation requirements. Verify all requirements are met before attempting installation of the CIC Pro system.

Site Requirements

The computer tower is capable of producing heat and must be physically located to allow the heat load to be adequately dissipated.

WARNING
SERVER LOCATION — The computer server is UL 60950\IEC 60950 certified equipment which may not meet the leakage requirements of patient care area equipment. This equipment must not be located in the patient vicinity as a shock hazard may exist, unless the medical electrical system standard, IEC 60601-1-1 is followed.

Failure to adequately ventilate the computer tower may cause equipment failure or improper operating conditions which may endanger the patients being monitored.

CAUTION
Do not locate the computer tower or display in an enclosed area that may restrict dissipation of the heat generated by the components. Any air flow restrictions may cause a rise in internal temperature which may result in equipment failure. The computer tower uses an internal forced air cooling system, but most displays do not.

The user must determine the heat dissipation requirements of the selected display and design a ventilation system accordingly.

Environmental Limits

The server operates reliably within normal office environmental limits. Select a site that meets these criteria:

- Clean and relatively free of excess dust.
- Well ventilated and away from sources of heat.
- Away from sources of vibration or physical shock.

Electromagnetic Fields and Electrical Noise

The server should be isolated from strong electromagnetic fields and electrical noise produced by electrical devices such as elevators, copy machines, air conditioners, large fans, large electric motors, radio and TV transmitters, and high frequency security devices.

Clearance and Airflow

The site should provide sufficient clearance behind and around the server to ensure proper cooling and airflow. Keep ventilating openings on the server free of obstructions.

Allow about 31 centimeters (12.2 inches) of clearance in back of the server, 60 centimeters (23.6 inches) on the sides, and 22 centimeters (9 inches) in front.

Access Space

Plan access space for server maintenance. Make sure there is convenient access to disconnect the AC power cord from the wall outlet or from the back of the server, because disconnecting the cord is the only way to remove AC power from the server before doing maintenance or upgrade procedures. Pressing the DC push-button on/off switch on the front panel does NOT remove server AC power.

Physical Specifications

Physical Specifications

	Nightshade Server	BCM Server
Height	49.02 cm (19.3 in)	42.17 cm (16.6 inches)
Depth	44.96 cm (17.7 in)	48.0 cm (18.9 inches)
Width	21.08 cm (8.3 in)	20.0 cm (7.9 inches)
Weight	17.1 kg (38 lbs.) minimum 22.9 kg (51 lbs.) maximum	11.3 kg (25 lbs.) minimum 13.1 kg (29 lbs.) maximum

Power Requirements

Duplex Wall Receptacles

CAUTION
Loss of power to the computer tower results in loss of patient monitoring capabilities to the system, and to any remote display monitors connected via hardwire or modem.

Two properly grounded duplex wall receptacles should be provided for each system. Additional receptacles may be required to accommodate peripheral equipment connected to the system. The wall receptacles must be installed in an approved junction box. Use only three-prong, polarized, hospital-grade wall receptacles to accept the three-prong polarized plug on the computer equipment.

Un-Interruptible Power Supply (UPS)

GE Medical Systems *Information Technologies* recommends the use of an un-interruptible power supply (UPS) with the system. If a UPS is NOT used, a power outage could result in an improper shut down of the system and cause a lengthy disk scan procedure when the unit reboots. You could also lose data in the event of a power outage if you do not use a UPS.

CAUTION
Connect the UPS to the PC CPU(s) and display(s) only. Do NOT connect printers or other devices to a UPS. Other devices my shorten estimated run times. If power is not restarted in time the unit shuts down and patients will not be monitored.

Follow the UPS manufacturer’s recommendations for installation.

UPS Runtime Estimates and Options

CAUTION
Connect the UPS to the PC CPU(s) and display(s) only. Do NOT connect printers or other devices to a UPS. Other devices may shorten estimated run times. If power is not restarted in time the unit shuts down and patients will not be monitored.

Runtimes are expressed in hours:minutes. Typical runtimes based on fully charged, new batteries operating under typical load conditions. Runtimes are affected by:

- Battery age,
- Ambient temperature,
- Site specific UPS usage patterns, and
- Load characteristics.

Your actual run time may be different.

UPS Runtimes (Hours:Minutes)			
Percent of Capacity	ON400	ON600	ON900
10	1:33	1:45	1:59
20	0:43	0:52	0:58
30	0:27	0:34	0:37
40	0:19	0:25	0:27
50	0:15	0:20	0:21
60	0:12	0:17	0:17
70	0:10	0:14	0:14
80	0:09	0:13	0:12
90	0:08	0:11	0:10
100	0:07	0:10	0:09

UPS Options		
Type	Description	Limits
UPS4=A	Oneac ON400XRA-HOE Domestic 120V 400VA, UL 1778, CSA 22.2	Will power one server and 21-inch display for approximately 10min.
UPS6=A	Oneac ON600A-HO Domestic 120V 600VA, UL 1778, CSA 22.2	Will power one server and 21-inch display for approximately 30min. Will power two servers and two 21-inch displays for approximately 10min.
UPS4=Y	Oneac ON4001-SN Intl. 220-240V 400VA, UL 1778, CSA 22.2	Will power 1 server and 21-inch display for approximately 10min.
UPS6=Y	Oneac ON6001-SN Intl. 220-240V 600VA, UL 1778, CSA 22.2	Will power one server and 21-inch display for approximately 30min. Will power two servers and two 21-inch displays for approximately 10min.
UPS4=C	Oneac ON900J-SN JAPAN 120V 50/60hZ 900VA, UL1778, CSA 22.2	Will power one server and 21-inch display for a minimum of 30min. Will power two servers and two 21-inch displays for a minimum of 10min.

Equipment Grounding

WARNING

SHOCK HAZARD — The computer tower and all peripheral equipment must be adequately grounded or a shock hazard may exist.

The grounding pin of all wall receptacles and all exposed metal parts (beds, radiators, water pipes, etc.) in any patient area should be electrically connected together. This common ground point should be connected to the nearest equipotential ground through a bonded grounding system, or with a 10 AWG stranded copper grounding cable.

The equipotential ground point should be as close to earth ground potential as possible. If a bonded grounding system is not available, the ground pin of each wall receptacle must be individually connected to a central grounding point. Do NOT jumper from ground pin-to-ground pin of the receptacles.

The grounding system must not carry current, such as a grounded neutral, since the current flow will produce potential differences along the ground path. These potential differences are a shock hazard source for equipment users and patients.

Do NOT use conduit as a ground conductor. Plastic (PVC) piping or fittings used in the conduit runs can break the electrical connection to ground, resulting in potential shock hazards.

The electrical grounding system should be connected on an earth ground. If this is not possible, then a good ground reference such as a metal water pipe or an electrically-conductive building component should be used. IT IS MORE IMPORTANT THAT ALL GROUNDED OBJECTS IN THE PATIENT AREA ARE AT THE SAME GROUND POTENTIAL RATHER THAN AT EARTH GROUND POTENTIAL.

CIC Pro Installation

WARNINGS

CIC Pro V4.x is NOT in-unit compatible with prior versions of CIC Pro or any version of Centralscope. Sharing of the same care unit name across central stations having incompatible software versions can result in lost or corrupted alarm defaults data and loss of audible alarms.

(CIC Pro v4.0.7 Only) Care units running more than one CIC Pro must complete the procedure "Care Units with Multiple CIC Pros Telemetry Defaults Upgrade" **on page 3-53** after performing the upgrade procedure. Failure to perform this procedure creates a in-unit incompatibility situation which can result in lost or corrupted telemetry alarm defaults data and loss of audible alarms.

Do not exceed a maximum of 15 CIC Pros in a single logical care unit. Both hardwire and telemetry beds are limited in the number of remote view connections that can be supported. Attempting simultaneous displays of a patient monitor (bedside or telemetry) at too many CIC Pros may cause lost or intermittent communication between CIC Pros and the patient monitor. This is evidenced by NO COMM or intermittent communication conditions for the beds. The maximum CIC Pros viewing a patient monitor can vary depending on patient monitor capabilities and network design.

WARNINGS

Only external devices specifically designed to be connected to the PC tower, or approved by GE Medical Systems *Information Technologies* for use with this system, should be connected, as specified in this manual or as otherwise specified by the manufacturer.

A shock hazard may exist if external devices are connected other than as described in this manual, or as directed by the manufacturer.

External equipment must be connected to the CIC Pro only by qualified biomedical engineering personnel.

WARNING

When using keyboard/video/mouse (KVM) switching devices with the CIC Pro, only the keyboard and mouse should be switched through the KVM. The video for each CIC Pro should be displayed on its own monitor. Failure to do so may result in delayed recognition of alarm events.

CAUTION

All external cabling used with the server systems must be routed so as not to interfere with access or operation of the system.

All cabling must be installed to protect against tripping and accidental disconnection of the cables.

Do NOT apply power until all equipment is installed and ready for use.

CAUTION

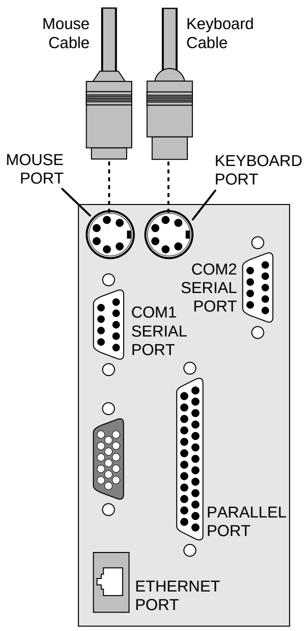
This assembly is static sensitive and should be handled using precautions to prevent electrostatic discharge damage.

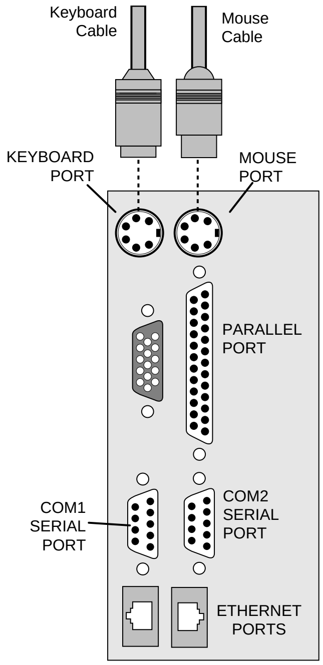
Pre-Installation Check

1. Remove all equipment, including all peripheral devices, from the shipping cartons and inspect for damage.
2. Identify all required cables and prepare them for installation.
3. Verify AC power is available for the computer tower and all peripheral equipment. Make sure the power supplies are installed, tested, and ready for use in accordance with “Pre-Installation Requirements” on page 3-3. This includes testing for proper grounding of the power source.
4. Verify the desired physical location for the computer tower is in accordance with “Site Requirements” on page 3-3. Place the computer at the selected site.

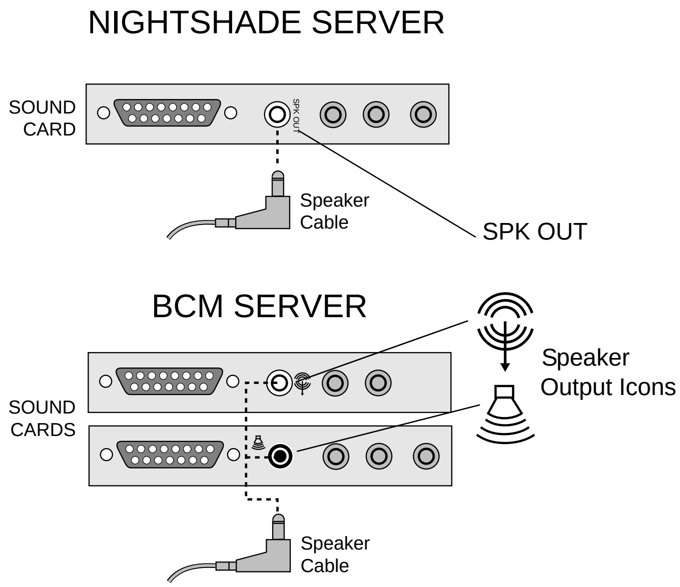
Connect Keyboard and Mouse

Connect the keyboard and mouse cables to the back of the PC tower.


NIGHTSHADE SERVER
Mouse Cable
Keyboard Cable
MOUSE PORT
KEYBOARD PORT
COM2 SERIAL PORT
COM1 SERIAL PORT
PARALLEL PORT
ETHERNET PORT

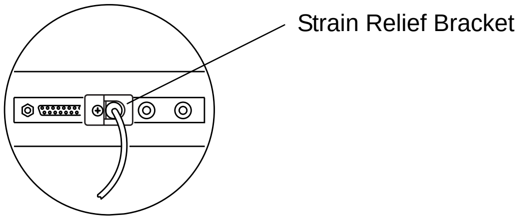

BCM SERVER
Keyboard Cable
Mouse Cable
KEYBOARD PORT
MOUSE PORT
PARALLEL PORT
COM1 SERIAL PORT
COM2 SERIAL PORT
ETHERNET PORTS

Install the Speakers


NIGHTSHADE SERVER
SOUND CARD
SPK OUT
Speaker Cable
SPK OUT
BCM SERVER
Speaker Output Icons
SOUND CARDS
Speaker Cable

1. Identify the speaker output jack on the sound card at the back of the PC tower. The speaker output jack is labeled **SPK OUT** or marked with an icon.

   NOTE
   The speaker output jack is always the left-most jack.


Strain Relief Bracket

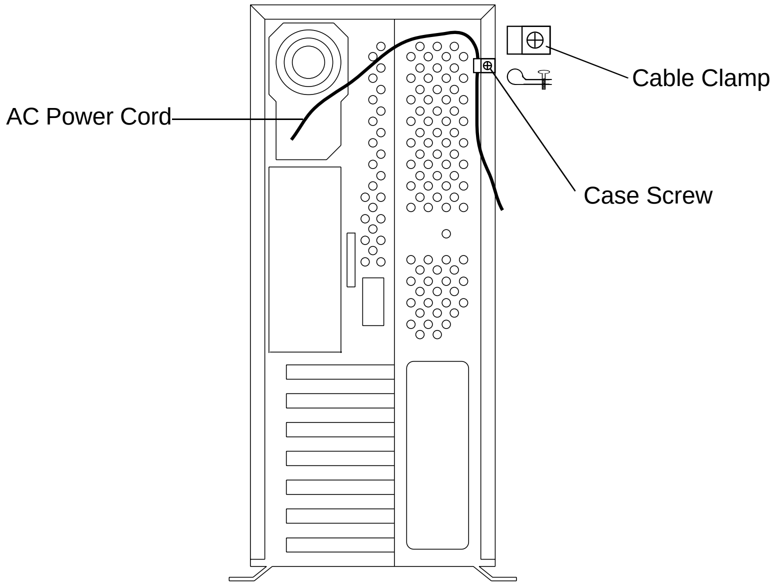
2. A bracket is used as a strain relief and to hold the speaker connector in place. Loosen the screw on the bracket just enough to insert the speaker connector through the bracket hole and into the speaker output jack. Make sure the connector is seated properly, then tighten the strain relief bracket screw to hold it in place.

WARNINGS

Accidental disconnect of the speaker cables will result in loss of audible patient alarms at the CIC Pro monitoring location. Make sure the speaker connections at the PC tower and the speakers are properly secured with the provided strain relief brackets.

CIC Pro audible alarms will not sound for patients with bedside monitoring devices configured to “Operating Room” mode.

Install the Power Cord



REAR VIEW OF TOWER

1. Remove the upper right case screw from the rear of the chassis.
2. Plug the AC power cord into the PC tower.
3. Install the provided cable clamp around the AC power cord approximately 15 cm (6 in.) from the server connection end.
4. Secure the cable clamp to the chassis with the case screw installed in the upper right case hole. Tighten the screw.

Connect the Video Display Monitor

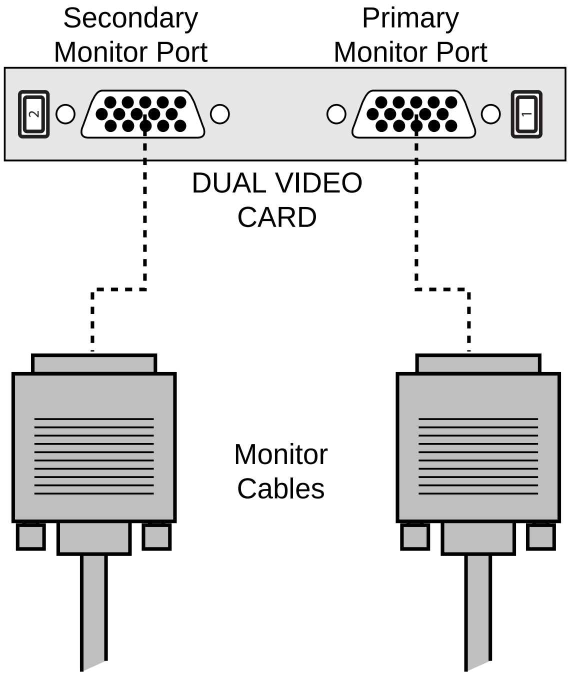
Connecting Monitors to a Dual Video Card

CIC Pro version 4.0.x and later support dual monitor configurations. Only one monitor (primary) can be used for patient waveform/parameter display. The secondary monitor can be used for CIC Pro webmin or other GE applications (such as Stat View, MUSE, etc.) and other hospital trusted applications and sites.

NOTE

Do not connect to the video connection on the mother board (near the parallel port connector).

Connect the monitor cables to the two video card connections at the back of the server.

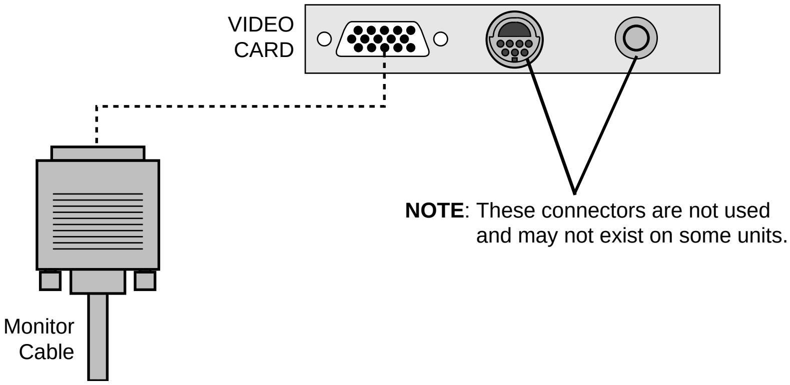


NOTE

The right video port is for the primary monitor. This port is used for the main CIC multiple patient viewer window, and when only one monitor is used with the server.

When upgrading CIC Pro Version 3.1 or earlier systems to dual monitors, refer to “Dual Monitor Installation and Configuration” on page 3-49 to install the drivers and configure the video display software settings to support the dual video card.

Connecting a Monitor to a Single Display Card


VIDEO
CARD
NOTE: These connectors are not used and may not exist on some units.
Monitor
Cable

NOTE

Do not connect to the video connection on the mother board (near the parallel port connector).

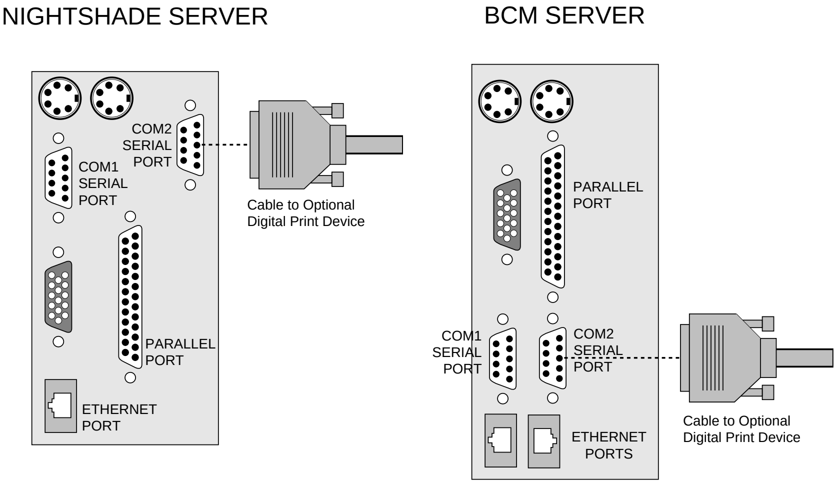
Connect the video display monitor cable to the video card connection at the back of the server.

Connect the Digital Writer Printer

NOTE

A DDW cannot be used for the following. Use a laser printer instead:

- ◆ if the CIC Pro is used with Unity PDS.
- ◆ to print Full disclosure and Flow Volume Loop information.


NIGHTSHADE SERVER
COM2
SERIAL
PORT
COM1
SERIAL
PORT
PARALLEL
PORT
ETHERNET
PORT
Cable to Optional
Digital Print Device
BCM SERVER
PARALLEL
PORT
COM1
SERIAL
PORT
COM2
SERIAL
PORT
ETHERNET
PORTS
Cable to Optional
Digital Print Device

1. Connect the PRN 50 or PRN 50–M Digital Writer cable to the **COM2** port at the back of PC tower and to the appropriate power source.

   NOTE

   To properly operate with the CIC Pro and telemetry systems, the PRN 50 or PRN 50-M must use software V2B or later.

2. Load the printer with paper.

ApexPro Option Installation

If installing a CIC Pro supporting ApexPro, complete the RX Network connection as required to interface the ApexPro telemetry system to the CIC Pro with the ApexPro host. Refer to the service manual for your specific ApexPro installation.

NOTE
Do not connect the CIC Pro with the ApexPro host unit to the network at this time.

WARNING
ApexPro v3.X is not compatible with prior versions of ApexPro within the same facility. If one ApexPro v3.X is installed at a facility, all ApexPro installation at the same facility must be upgraded to v3.X.

CIC Pro Configuration

Configure Time/Date Settings

WARNING
This warning applies when a new CIC Pro is being configured or a CIC Pro is re-imaged.

Make sure the CIC Pro you are configuring is not connected to the network when configuring time/date settings.

Because the time master CIC Pro changes the time/date values of all other CIC Pros on the network to match it's own, any change to the time/date values on one CIC Pro can effect all units on the network, which can result in other monitors altering the time and date parameter of some patient data.

Before connecting new/updated CIC Pros to the network, make sure the time/date values for all CIC Pros on the network are set the same (as close as possible), otherwise, patient data time/date parameters could be adversely effected.

Time Zone AND Time/Date

If making changes to the time zone and the time/date use the following:

1. Select *Setup CIC* at the bottom of the screen.
2. From the *CIC Setup* screen, select the *Service Password* tab.
3. Type **mms_com** at the password prompt. Press **Enter**. Verify the *GE Marquette Clinical Information Center* or *GEMS Information Technologies CIC* command window opens and the title bar is blue, indicating it is active. If not, place your cursor inside the window and click to activate it.

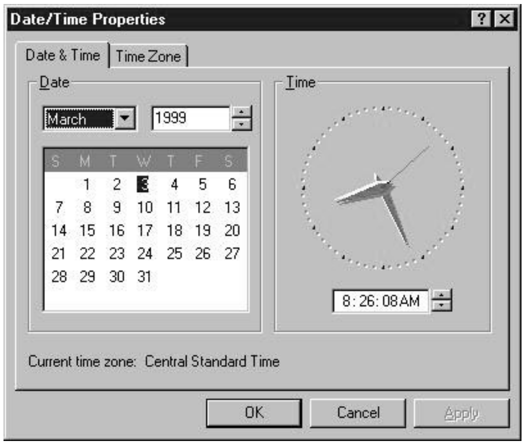
NOTE

Software version *4.x* shown in the following steps is used for example only. The version number appearing on your central station screens should match the version found in the lower left corner of the *CIC Setup* screen.

4. Verify *C:\Program Files\Marquette\CIC\4.x>* appears, indicating the current working directory. If not, type the following:

   cd\Program Files\Marquette\CIC\<your software version> and press **Enter**.

5. Type **stop** and press the **Enter** key. You will see the red screen.
6. At the command prompt type **su<space>cicadm<space>cicadm1,3,5,7** and press **Enter**. Verify the *C:\winnt\system32\cmd.exe* command window opens. If the window title bar is not blue, place your cursor inside the window and click to activate it.
7. Type **timedate** and press **Enter**. The Windows NT Date & Time control applet appears.



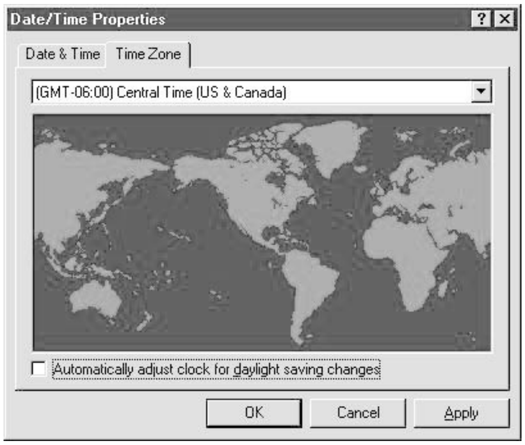
Date: March 1999

	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Time: 8:26:08AM

Current time zone: Central Standard Time

8. Select the *Time Zone* tab and verify the correct time zone is selected.
9. Select the *Date & Time* tab. Set the correct date and time. Click on *Apply*.



(GMT-06:00) Central Time (US & Canada)

☐ Automatically adjust clock for daylight saving changes

10. Verify the *Automatically adjust clock for daylight saving changes* box is NOT checked.
11. Click on *Apply*.
12. Click on *OK* to close all windows when finished.

13. Close all command windows.
14. Restart the CIC applications by opening the *Start* menu located in the lower left corner if the Windows NT main screen, selecting *Shutdown* from the *Start* menu and selecting *Close all programs and log on as a different user*.

Time and Date Only

If changing the time or date (not changing the time zone) use the following.

1. Select *Setup CIC* at the bottom of the screen.
2. From the *CIC Setup* screen, select the *Service Password* tab.
3. Type **mms_com** at the password prompt. Press **Enter**. Verify the *GE Marquette Clinical Information Center* or *GEMS Information Technologies CIC* command window opens and the title bar is blue, indicating it is active. If not, place your cursor inside the window and click to activate it.

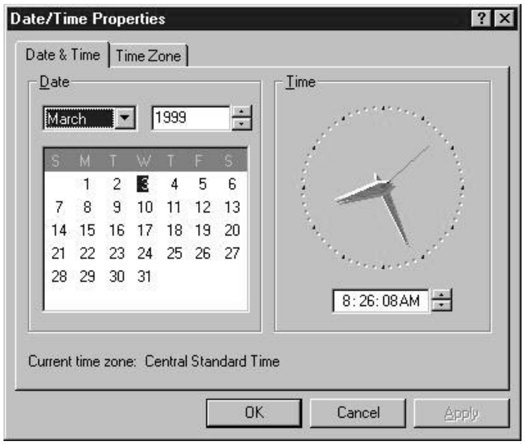
   NOTE

   Software version *4.x* shown in the following steps is used for example only. The version number appearing on your central station screens should match the version found in the lower left corner of the *CIC Setup* screen.

4. Verify *C:\Program Files\Marquette\CIC\4.x>* appears, indicating the current working directory. If not, type the following:

   cd\Program Files\Marquette\CIC\<your software version> and press **Enter**.

5. At the command prompt type **su<space>cicadm<space>cicadm1,3,5,7** and press **Enter**. Verify the *C:\winnt\system32\cmd.exe* command window opens. If the window title bar is not blue, place your cursor inside the window and click to activate it.
6. Type **timedate** and press **Enter**. The Windows NT Date & Time control applet appears.

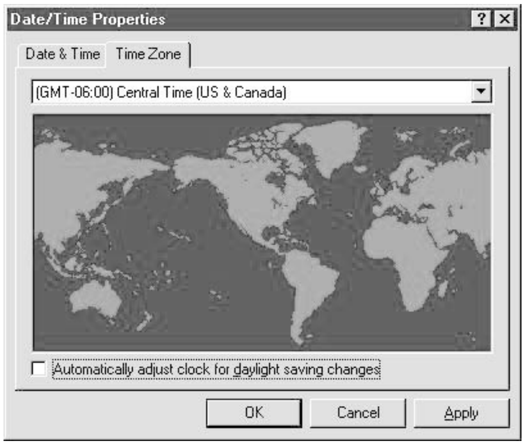


Date: March 1999

Time: 8:26:08AM

Current time zone: Central Standard Time

7. Select the *Date & Time* tab. Set the correct date and time. Click on *Apply*.



Date/Time Properties

(GMT-06:00) Central Time (US & Canada)

☐ Automatically adjust clock for daylight saving changes

8. Verify the *Automatically adjust clock for daylight saving changes* box is NOT checked.
9. Click on *Apply*.
10. Click on *OK* to close all windows when finished.

Time Change for Day Light Saving Time

NOTE

For a description of the effects of time changes on Full Disclosure data stored at the CIC Pro, refer to “Full Disclosure” on page 2-6.

NOTE

If you change the time at a bedside or at any one CIC Pro, the change will be reflected at all CIC Pros and bedsides on the Unity Network.

NOTE

Stay connected to the Unity MC Network. Do NOT disconnect the MC, IX or RX Unity Network connections to the CIC Pro while using Time Date functionality on the CIC Pro.

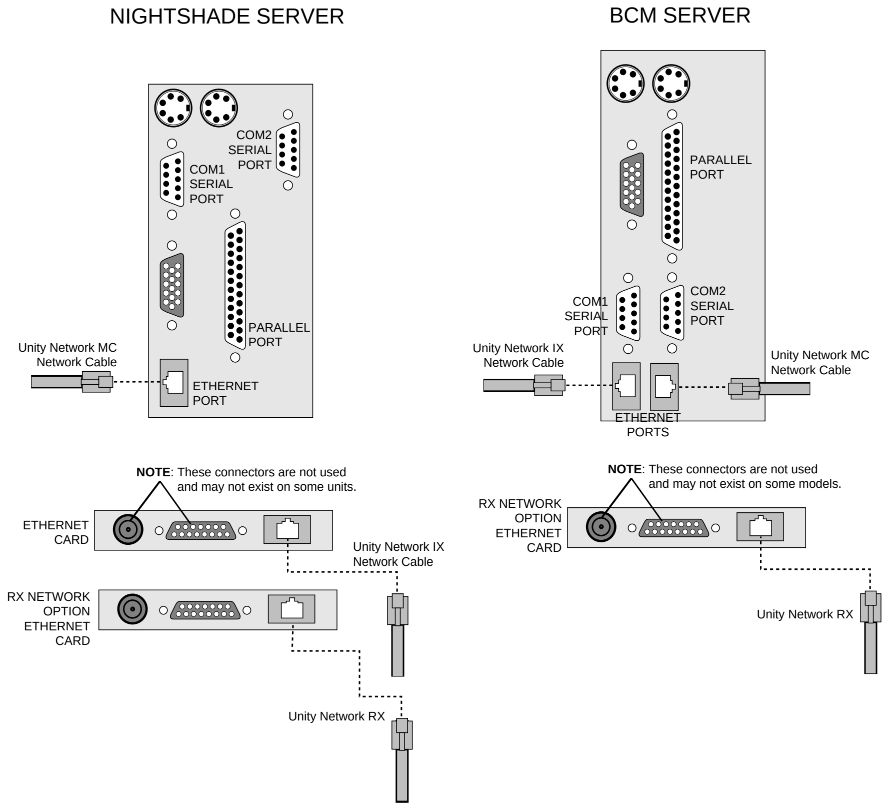
To change the time at the CIC Pro, follow the procedure for “Time and Date Only” on page 3-17.

Connect to Unity Network

Connect the Unity Network drop cables to the back of the computer tower using the following table and figures to complete the proper connections.

NOTE

See the “Assembly Drawings” on page 9-1 for exact location of Ethernet cards.


NIGHTSHADE SERVER
COM2 SERIAL PORT
COM1 SERIAL PORT
PARALLEL PORT
Unity Network MC Network Cable
ETHERNET PORT
BCM SERVER
PARALLEL PORT
COM1 SERIAL PORT
COM2 SERIAL PORT
Unity Network IX Network Cable
Unity Network MC Network Cable
ETHERNET PORTS
NOTE: These connectors are not used and may not exist on some units.
ETHERNET CARD
Unity Network IX Network Cable
RX NETWORK OPTION ETHERNET CARD
Unity Network RX
NOTE: These connectors are not used and may not exist on some models.
RX NETWORK OPTION ETHERNET CARD
Unity Network RX

Unity Network Connections		
Unity Network Connection	Nightshade Server	BCM Server
Unity Network MC	Ethernet Port on CPU	Ethernet Port marked “MC”
Unity Network IX	Ethernet card on back of CPU	Ethernet Port marked “IX”
Unity Network RX (telemetry systems, e.g. ApexPro)	Optional ethernet card on back of CPU	Optional ethernet card on back of CPU

Install Optional Licenses

Install any optional application licenses at this time. Refer to the GE “Unity Network® Information Suite (IS) Server License Configuration Guide”.

Install a Printer

Complete the appropriate procedure(s) to configure the CIC Pro for the desired printer connection.

Install HP 4200 Printer Driver

If you will be installing a laser printer to the CIC Pro, install the updated HP 4200 driver included with this software release.

1. Select *Setup CIC* and click the *Service Password* tab.
2. Type **mms_com** and press the **Enter** key.
3. At the *C:\Program Files\Marquette\CIC\4.0.x>* prompt, type **stop** and press the **Enter** key.
4. Select *Start* > *Shut Down,* and select the *Close all programs and log on as a different user?* button.
5. Hold down the **Shift** key and click the *Yes* button. Continue to hold down the **Shift** key until a log on screen appears.
6. Type **administrator** at the *User name* prompt and press **Tab**.
7. Type **admin1,3,5,7** at the *Password* prompt and press **Enter**.
8. Select *Start* > *Settings* > *Printer*.
9. Double click on the *Add Printer* icon to start the *Add Printer Wizard*.
10. Click to select the *My Computer* radio button. Click *Next* to view the available ports.
11. Click to select the *LPT1:* local port checkbox. Click *Next*.
12. Click *Have Disk.* Insert the CD titled “CIC 4.0.x” into the CD-ROM drive.
13. Click *Browse*. Go to *E:\HP 4200N Printer Driver NT4.0\<English* or respective language>*\Ps* and highlight the *hp4200ps.inf* file.
14. Click *Open*. Click *OK* in the *Install From Disk* window.
15. Select *HP LaserJet 4200 PS* from *Printers* list. Click *Next*.
16. Click to select the *Keep existing driver (recommended)* radio button. Click *Next*.
17. Select *HP LaserJet 4200 Series PS* from *Printers* list. Click *Next*.
18. If the message *Do you want your Windows-based programs to use this printer as the default printer?* displays, click to select *Yes* or *No*. Click *Next.*
19. Leave the printer name as it appears. Click *Next*.
20. Select *Shared* or *Not Shared* at the prompt. If *Shared* is selected, leave the *Shared Name* as it appears, and select the appropriate operating systems from the list. Click *Next.*
21. Select *Yes* for printing a test page. Click *Finish*.
22. Click *Yes* if the test page printed correctly. If it didn’t print correctly, click *No*, and follow the *Windows NT Help* instructions to troubleshoot the printer.

23. Select *Start* > *Shut Down*, and select the *Close all programs and log on as a different user?* button. Allow the tower to boot up in CIC mode.
24. Install/configure printers, as appropriate for your specific installation.

Installing a Network Laser Printer

Perform the following procedure to install a network laser printer:

1. If you are not logged in as “administrator”:
    a. Select *Setup CIC* and click on the *Service Password* tab.
    b. Type **mms_com** and press the **Enter** key. The *GEMS Information Technologies CIC* command window opens with the prompt: **C:\Program Files\Marquette\CIC\***4.x***>**
    c. Type **stop** and press the **Enter** key.
    d. Select *Start* > *Shut Down*, then click the *Close all programs and log on as a different user* button.
    e. Press and hold **Shift** and click on the *Yes* button. Continue to hold **Shift** until you get a log on screen.
    f. Type **administrator**, press the **Tab** key and type **admin1,3,5,7** (all lowercase, with no spaces). Press the **Enter** key; this logs you onto the system as the administrator.
2. Select *Start* > *Settings* > *Printers*. The *Printers* window displays. Double click the *Add Printer* icon.
3. Select *My computer* and click *Next* to display the available ports.
4. Click on *Add Port*, then double click on *LPR Port*. Click *New Port*, and enter the IP address assigned to the printer (e.g., 121.50.1.167).
5. Press the **Tab** key to move to the field labeled *Name of Printer* or *Print Queue*. On that server type **RAW** and click *OK*.
6. Click on the *Close* box in the *Printer Ports* dialog box. This returns you to the *Add Printer Wizard* screen. There should be a port labeled with the IP address you entered in the prior steps with a check mark in the box.
7. Click *Next* to proceed. The next screen has the manufacturers on the left and the printer device models on the right. Scroll to select the manufacturer of your printer.

    CIC Pro supports the following HP LaserJet series printers: HP 4000N, 4050N, 4100N, 4200N and 4250N.

8. Select the HP LaserJet series PS driver for your printer model.
    - HP LaserJet 4000 Series PS
    - HP LaserJet 4050 Series PS
    - HP LaserJet 4100 PS
    - HP LaserJet 4200 PS (for HP LaserJet series 4200N AND 4250N printers)

    NOTE

    There is no unique printer driver for the HP LaserJet 4250N printer; use the HP LaserJet 4200 PS printer driver.

NOTE

During printer set-up, a PS printer driver MUST be selected. PCL printer drivers are NOT supported.

9. Click *Next*
10. This brings up *Printer name*. Use the default name and click *Next*.
11. This brings up a window asking if the printer is shared or not shared. Select *Not Shared,* then click *Next*.
12. If a dialog displays asking if you want this to be your default printer, select *Yes* or *No*, as appropriate, and click *Next*.
13. When prompted *Do you wish to print a test print?* Select *Yes*, then click *Finish*. The system prints a test sheet on the printer.
14. If the test sheet prints correctly, select *Yes* then *Start* > *Shutdown* > *Close all programs and log on as a different user,* then select *Yes*. Allow the system to restore the CIC Pro screen.

NOTE

The final printer selection steps are completed during the CIC Pro setup procedures that follow.

Installing a Parallel Printer

Perform the following procedure to install a parallel printer to this CIC Pro.

1. Select *Setup CIC* and click on the *Service Password* tab.
2. Type **mms_com** and press the **Enter** key. The *GEMS Information Technologies CIC* command window opens with the prompt:
   C:\Program Files\Marquette\CIC\*4.x.x***>**
3. Type **stop** and press the **Enter** key.
4. Select *Start* > *Shut Down*, then click the *Close all programs and log on as a different user* button.
5. Press and hold **Shift** and click on the *Yes* button. Continue to hold **Shift** until you get a log on screen.
6. Type **administrator** for the user name, and press the **Tab** key and type **admin1,3,5,7** (with no spaces). Press the **Enter** key; this logs you onto the system as the administrator.
7. Select *Start* > *Settings* > *Printers*. The *Printers* window displays. Double click the *Add Printer* icon.
8. Select *My computer* and click *Next* to display the available ports.
9. Click to select the *LPT1* local port checkbox. Click *Next* to proceed.
10. Select *HP* from the *Manufacturers* list and select the appropriate printer.
11. Select the HP LaserJet series PS driver for your printer model.
    - HP LaserJet 4000 Series PS
    - HP LaserJet 4050 Series PS
    - HP LaserJet 4100 PS
    - HP LaserJet 4200 PS (for HP LaserJet series 4200N AND 4250N printers)

NOTE

There is no unique printer driver for the HP LaserJet 4250N printer; use the HP LaserJet 4200 PS printer driver.

NOTE

During printer set-up, a PS printer driver MUST be selected. PCL printer drivers are NOT supported.

12. Click *Next*.
13. A box indicating a driver is already installed displays. Select the existing driver and click *Next*.
14. This brings up *Printer name*. Use the default name and click *Next*.
15. Select *Shared.* Use the default *Shared Name* field*.* Select *Next*.
16. If a dialog displays asking if you want this to be your default printer, select *Yes* or *No*, as appropriate, and click *Next*.
17. When prompted *Do you wish to print a test print?* Select *Yes*, then click *Finish*. The system prints a test sheet on the printer.
18. If the test sheet prints correctly, select *Yes* then *Start* > *Shutdown* > *Close all programs and log on as a different user*, then select *Yes*. Allow the system to restore the CIC Pro screen.

NOTE

The final printer selection steps are completed during the CIC Pro setup procedures that follow.

Connecting to an Existing Parallel Printer

Perform the following procedure to connect the CIC Pro to an existing shared parallel printer at a different location.

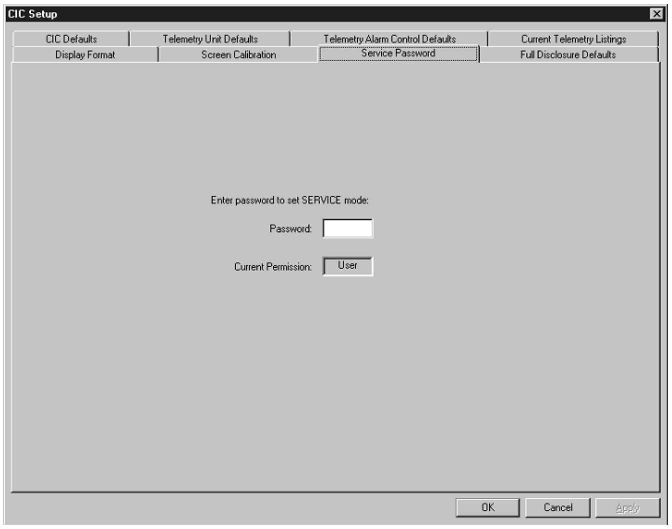
1. From the CIC patient monitoring screen, select *Start* > *Help.*
2. A *Help* topics Windows NT windows opens. Select the *Index* tab and type in the word **printer**. Press the **Enter** key.
3. Click on the icon arrow in step 1 of the Windows NT Help window to install a printer.
4. The *Add Printer* Wizard window opens, select *Network Printer Server* and select *Next.*
5. The *Connect to Printer* window opens. Double click on the PC in the workgroup to show the shared printer on the network.
6. Double click on the printer to open the next window telling you that the network printer has been successfully installed. Select *Finish*.
7. Close the *Help* window.

NOTE

The final printer selection steps are completed during the CIC setup procedures that follow.

Setup the CIC Pro

Access Service Mode


CIC Setup
CIC Defaults
Telemetry Unit Defaults
Telemetry Alarm Control Defaults
Current Telemetry Listings
Display Format
Screen Calibration
Service Password
Full Disclosure Defaults
OK
Cancel
Apply

Enter password to set SERVICE mode:

Password:

Current Permission: User

WARNING

The service mode is intended for use only by qualified personnel with training and experience in its use. The consequences of misuse include loss of alarm configuration, loss of patient data, corruption of the clinical information center operating system software, or disruption of the entire network.

1. Use the mouse to select *Setup CIC* at the bottom of the screen.
2. From the *CIC Setup* screen, select the *Service Password* tab.
3. When prompted for the service password, type **mms_cic** and press **Enter**.

NOTE

When you are in service mode, a cross-shaped (+) cursor replaces the normal arrow cursor.

Calibrate the Screen

WARNING

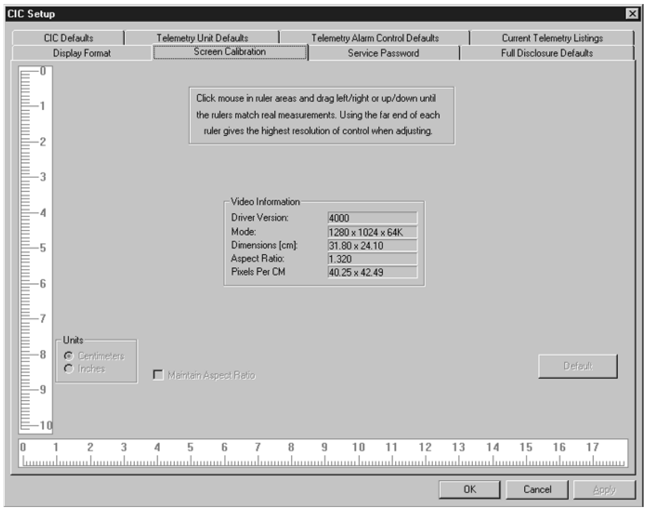
When using a video splitter with the CIC Pro, screen calibration may be possible with only one of the monitors connected to the splitter. This is because changing calibration for one monitor will effect the calibration of all other monitors connected to that same splitter.

When using monitors connected to a splitter, only the last monitor calibrated will have proper calibration. Manual measurements should be made from that monitor only.

NOTE

A flexible clear plastic ruler calibrated in inches and centimeters is recommended for this procedure.

1. Click the *Screen Calibration* tab. The *Screen Calibration* window displays.


CIC Setup
CIC Defaults
Telemetry Unit Defaults
Telemetry Alarm Control Defaults
Current Telemetry Listings
Display Format
Screen Calibration
Service Password
Full Disclosure Defaults
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
Units
○ Centimeters
○ Inches
☐ Maintain Aspect Ratio
Default
OK
Cancel
Apply

Click mouse in ruler areas and drag left/right or up/down until the rulers match real measurements. Using the far end of each ruler gives the highest resolution of control when adjusting.

Video Information

Driver Version: 4000
Mode: 1280 x 1024 x 64K
Dimensions [cm]: 31.80 x 24.10
Aspect Ratio: 1.320
Pixels Per CM 40.25 x 42.49

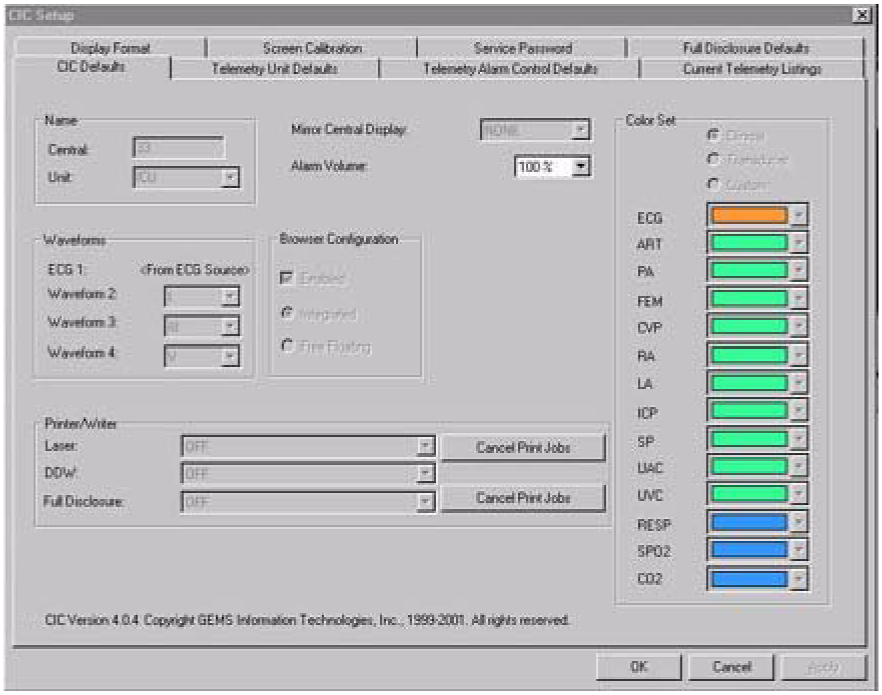
2. The illustration shows the *Screen Calibration* screen. In the *Units* box, use the mouse to choose *Inches* or *Centimeters* as desired.
3. Click the *Default* button to set the display to the default resolution of the Windows NT operating system.
4. Hold your ruler horizontally on the computer screen, aligning the zero mark of your ruler with the horizontal zero mark of the screen ruler.
5. Position the arrow cursor on the screen ruler. Hold down the left mouse button while you drag (or pull) the screen ruler as required until the calibration marks of the screen ruler match the calibration marks of your ruler, then release the mouse button.
6. Repeat this procedure to calibrate the vertical screen ruler.
7. When you finish, click *Apply* at the lower right corner of the calibration screen to save the calibration settings.

NOTE

The *Maintain Aspect Ratio* button on the calibration screen allows you to adjust both screen rulers simultaneously. However, because of differences in monitors and screen resolution, it is recommended that each ruler be adjusted separately. (A check mark in the box indicates when this option is selected. Click on the check box to deselect it.)

Set the CIC Pro Defaults

Open the *CIC Defaults* Screen


CIC Setup
Display Format
Screen Calibration
Service Password
Full Disclosure Defaults
CIC Defaults
Telemetry Unit Defaults
Telemetry Alarm Control Defaults
Current Telemetry Listings
Name
Waveforms
Browser Configuration
Printer/Writer
Color Set
ECG
ART
PA
FEM
CVP
RA
LA
ICP
SP
UAC
UVC
RESP
SPO2
CO2
Cancel Print Jobs
Cancel Print Jobs
OK
Cancel
Apply

Central:
Unit: ICU
Mirror Central Display: NONE
Alarm Volume: 100 %
ECG 1: <From ECG Source>
Waveform 2: I
Waveform 3: II
Waveform 4: V
☑ Enabled
● Integrated
○ Free Floating
● Clinical
○ Transducer
○ Custom
Laser: OFF
DDW: OFF
Full Disclosure: OFF

CIC Version 4.0.4. Copyright GEMS Information Technologies, Inc., 1999-2001. All rights reserved.

Click on the *CIC Defaults* tab to open the *CIC Defaults* screen shown.

Set the Central Name

NOTE

> All other systems on the GE Medical Systems *Information Technologies*' Unity Network MC network use the *Central Name* to identify this CIC Pro system. The Central Name should be relevant to the location, such as CS-2 or SDU3.
>
> Make sure no other central stations have the same Central Name.
>
> Press **Tab** to enter the *Name* fields. The maximum length of the name is four characters.

Click the text cursor in the *Central* field.

Type the *Central* name. When finished, click *Apply* at the lower right corner of the screen to save the setting.

Set the Unit Name

NOTE

> All other systems on the Unity Network MC network use the entered care unit name to identify this CIC Pro system. The care unit name should be relevant to the location, such as CCU or ICU-1.
>
> It is very important to enter the correct Care Unit name. Be especially careful of the name's spelling.
>
> If any other CIC Pro systems are intended to have the same care unit name,

make sure the names match exactly.

CAUTION

Once the care unit name is programmed, and the CIC Pro system is placed in use, avoid changing the care unit name. Changing the care unit name deletes all Full Disclosure data stored on this PC, and also deletes the list of transmitters stored in the CIC Pro system. You must re-enter that data after you change the care unit name.

Click on the arrowhead next to the *Unit* name box to open the pull-down list of unit names. Click to select the desired name, or type a name into the Unit name box and press **Enter**.

NOTE

If the care unit name is not listed in the pull-down list, you must type it in. The name cannot exceed 7 characters.

When finished, click *Apply* at the lower right corner of the screen to save the setting.

Set the Waveform Parameters

Select the waveforms you wish to display (up to three in addition to the ECG).

- *Graph Waveform ECG 1:* Default from *ECG Source*.
- *Graph Waveform 2 – 4:*Allows you to enable/disable graphing for subsequent ECG leads. Choices are *Off, I, II, III, V, aVR, aVL,* and *aVF*.

When finished, click *Apply* at the lower right corner of the screen to save the setting.

Printer/Writer Selections

NOTE

A DDW cannot be used for the following. Use a laser printer instead:

- if the CIC Pro is used with Unity PDS.
- to print Full disclosure and Flow Volume Loop information.

Full disclosure reports can potentially be very large and take a very long time to print. This can block alarm graphs to that printer. Therefore, it is recommended that the print setup for full disclosure reports be different from other patient printing.

It is important to note that the printer selection list for full disclosure is different from the printer selection list for graphing patient data. The printer list shown here may not include printers defined on the GE Unity Network IX network.

Laser: – Select your network or installed parallel laser printer from the drop down list.

NOTE

Do not select a shared printer for *Laser.* The printer that is displayed in the Laser window is broadcasted over the Unity Network MC network for the bedside monitors to see as a service offered by this CIC Pro. Only the CIC Pro that has the printer physically connected to it should be selected in the Laser window.

DDW: – Select the COM port being used by the Digital Writer.

Full Disclosure: – Select your network or parallel printer.

Click *Apply* to save the new settings.

Setup a Mirrored CIC Pro

The *Mirror Central Display* option allows double-monitoring of patients from remote, or secondary central stations. The display on the remote central station is configured to mirror the originating central station (i.e. the same patients are shown in the same display slots).

If the remote central station is located in the same care unit as the originating central station, it can be used to perform the *Admit/Discharge*, or any other display-type operation(s). The changes affect both central stations. For example, if the patient in a display slot is changed at one central station, the change is also automatically performed on the mirroring central station.

CAUTION

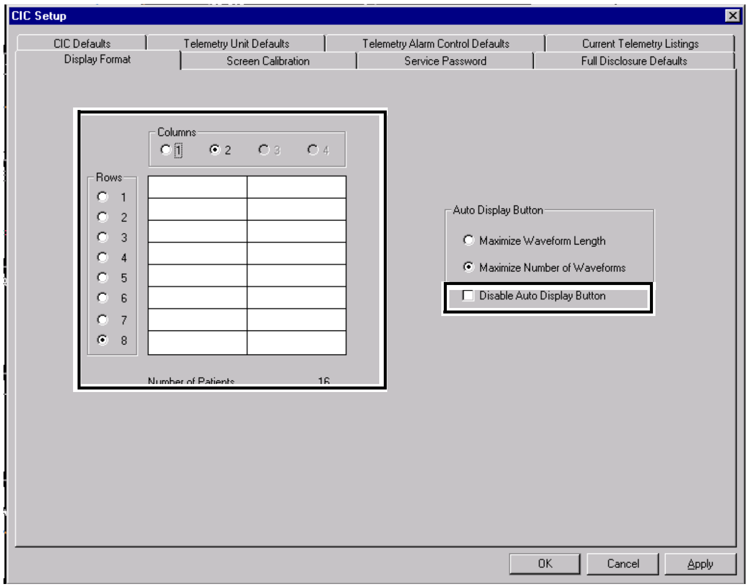
Use caution when configuring mirror central station displays. Since changes at one central station can affect the other display, there may be an inadvertent loss of patient monitoring at the primary central station.

You can set up a mirrored CIC Pro for remote monitoring. This is set in the service mode. Changes made on one CIC Pro are NOT always made at the other CIC Pro. The main and mirrored CIC Pro share bed lists. When a mirrored CIC Pro is set up, these rules are in place:

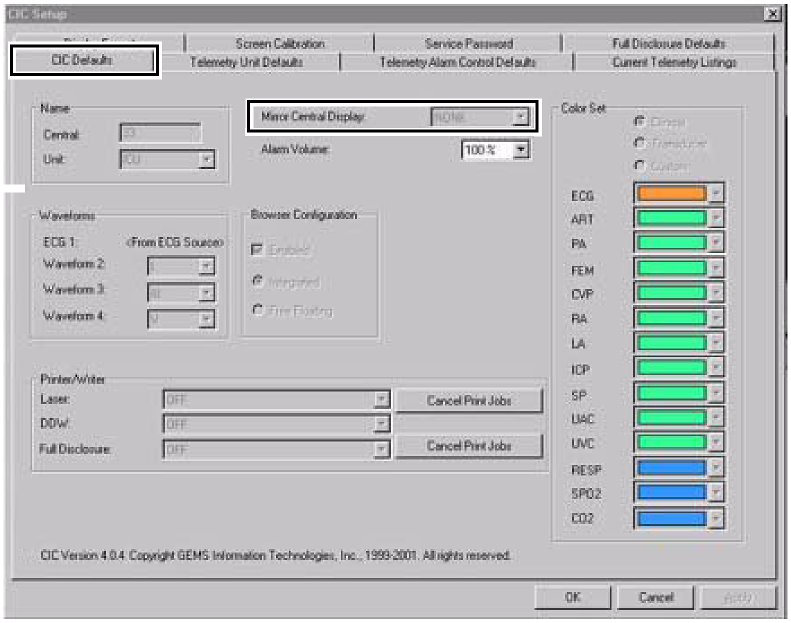
- If the user selects new parameters or colors to view on one display, that view is NOT “mirrored” on the other display.
- *Auto Display* is disabled at the mirrored CIC Pro. However, it is still active on the main CIC Pro. You must select *Disable Auto Display* on the *Display Format* tab of the main CIC Pro.
- When using the mirror feature, configure both the main and mirrored CIC Pro to the same *Display Format* tab settings. Whenever these settings are changed on one CIC Pro, they are NOT reflected on the other.
- The title bar of the mirror CIC Pro displays *mirror of [CIC SELECTED]*.

To set up a mirrored CIC Pro:

1. At the CIC Pro mirroring the main CIC Pro, click on *Setup CIC*.
2. *Auto Display* is disabled on the mirror CIC Pro. However, it is still active on the main CIC Pro. Select the *Display Format* tab and then click the *Disable Auto Display* button.


CIC Setup
CIC Defaults
Telemetry Unit Defaults
Telemetry Alarm Control Defaults
Current Telemetry Listings
Display Format
Screen Calibration
Service Password
Full Disclosure Defaults
Columns
○ 1 ● 2 ○ 3 ○ 4
Rows
○ 1
○ 2
○ 3
○ 4
○ 5
○ 6
○ 7
● 8
Number of Patients 16
Auto Display Button
○ Maximize Waveform Length
● Maximize Number of Waveforms
☐ Disable Auto Display Button
OK
Cancel
Apply

3. Configure both the main and mirrored CIC Pro to the same *Display Format* tab settings for the mirror feature to work correctly. Set the *Columns* and *Rows* in the *Display Format* tab of the mirrored CIC Pro to match the main CIC Pro.
4. Select the *CIC Defaults* tab.
5. At *Mirror Central Display* there is a drop-down box. All CIC Pros on the network are listed in this box. Select the CIC Pro you want mirrored on the mirror CIC Pro.


CIC Setup
Display Format
Screen Calibration
Service Password
Full Disclosure Defaults
CIC Defaults
Telemetry Unit Defaults
Telemetry Alarm Control Defaults
Current Telemetry Listings
Name
Central:
Unit: ICU
Mirror Central Display: NONE
Alarm Volume: 100 %
Color Set
● Default
○ Transducer
○ Custom
ECG
ART
PA
FEM
CVP
RA
LA
ICP
SP
UAC
UVC
RESP
SPO2
CO2
Waveforms
ECG 1: <From ECG Source>
Waveform 2:
Waveform 3:
Waveform 4:
Browser Configuration
☑ Enabled
● Integrated
○ Free Floating
Printer/Writer
Laser: OFF
DDW: OFF
Full Disclosure: OFF
Cancel Print Jobs
Cancel Print Jobs
CIC Version 4.0.4 Copyright GEMS Information Technologies, Inc., 1999-2001. All rights reserved.
OK
Cancel
Apply

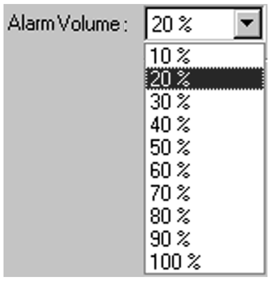
6. Check the title bar on the mirroring CIC Pro to assure that it is mirroring the correct CIC Pro.

7. When complete, click *Apply* at the lower right corner of the screen to save the new settings.

Set the Alarm Volume

This box allows you to set the alarm volume for the CIC Pro. To set the volume lower than 40%, you must be in service mode. To adjust the default alarm volume between 40-100% volume:

1. Click on the drop down menu in the *Alarm Volume* control area. The *Alarm Volume* drop down menu opens.



2. Click on the desired volume level. The volume can be set between *40%* and *100%* in the user mode.

   NOTE

   If the alarm level is set below 40% in service mode, the *Alarm Volume* is disabled for the user.

3. When you are satisfied with the new volume level, use the mouse to click *Apply* to activate your change.

Browser Configuration (CIC Pro V4.0.x and Later Only)

CAUTION

SECURITY — The web browser which runs in conjunction with the CIC Pro is intended for hospital INTRANET use only. If confidential patient information is made available from the hospital intranet, the security of the data is the responsibility of the hospital.

This control allows you to disable/enable and configure the web browser. When enabled, the *Browser Configuration control* includes the following possibilities.

- Single Monitor—Browser *Integrated* into Single Patient Viewer,
- Single Monitor—Browser *Free Floating*
- Dual Monitor—Browser into second monitor.

To exit the web browser, select the *Close* button on the CIC Pro.

Adjust the Color Set

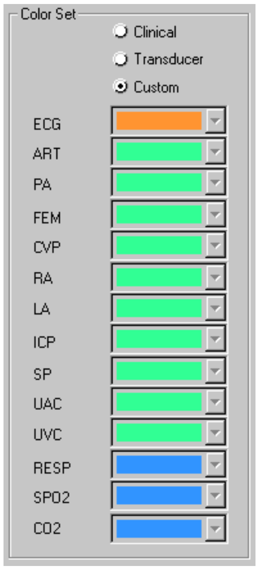
This option allows you to set a color scheme for waveforms. Preset choices are *Clinical*, *Transducer*, or *Custom*. You must be in the service mode to make modifications to the color set.

- *Clinical*—This sets the colors for single-parameter or double-parameter patient monitoring. *ECG* waveforms display in orange; *ART*, *PA*, *FEM*, *CVP*, *RA*, *LA*, *ICP*, *SP*, *UAC*, and *UVC* display in green; and *RESP*, *SPO2*, and *CO2* display in blue.
- *Transducer*—This sets the colors for multi-parameter patient monitoring. Display colors are: *ECG* in brown, *ART* in red, *PA* in yellow, *FEM* in red, *CVP* and *RA* in blue, *LA* and *ICP* in white, *SP* in green, *UAC* in red, *UVC* in blue, *RESP* and *SPO2* in green, and *CO2* in white.
- *Custom*—This selection allows you to set each waveform color individually.

NOTE

> When you select *Custom*, you can select color for each of the fourteen waveform types individually.
>
> When you select either *Clinical* or *Transducer*, access to the color palettes for individual waveforms is disabled.

To access and change the *Color Set*:



Color Set

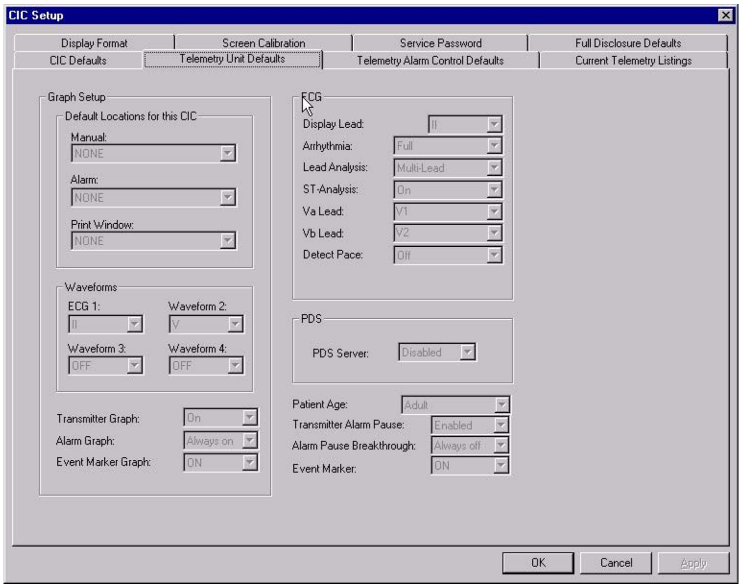
○ Clinical
○ Transducer
● Custom

ECG 🟧
ART 🟩
PA 🟩
FEM 🟩
CVP 🟩
RA 🟩
LA 🟩
ICP 🟩
SP 🟩
UAC 🟩
UVC 🟩
RESP 🟦
SPO2 🟦
CO2 🟦

1. Click on the arrow next to the waveform name box to open the pull-down list of colors.
2. Click on the desired color to select it.
3. When color selections are complete, click *Apply* at the lower right corner of the screen to save the new color settings.

Set the Telemetry Unit Defaults

Open the Telemetry Unit Defaults screen by clicking the *Telemetry Unit Defaults tab.*



Graph Setup

Default Locations for this CIC

Manual: NONE

Alarm: NONE

Print Window: NONE

Waveforms

ECG 1: II

Waveform 2: V

Waveform 3: OFF

Waveform 4: OFF

Transmitter Graph: On

Alarm Graph: Always on

Event Marker Graph: ON

ECG

Display Lead: II

Arrhythmia: Full

Lead Analysis: Multi-Lead

ST-Analysis: On

Va Lead: V1

Vb Lead: V2

Detect Pace: Off

PDS

PDS Server: Disabled

Patient Age: Adult

Transmitter Alarm Pause: Enabled

Alarm Pause Breakthrough: Always off

Event Marker: ON

This option allows you access to the telemetry default settings. In user mode, all of the controls on the *Telemetry Unit Defaults* tab sheet are view-only. You must be in the service mode to review and make modifications to the *Telemetry Unit Defaults* tab sheet at the CIC Pro.

NOTE

> For more information on setting Telemetry Unit Defaults, refer to the telemetry system's operator manual.

Graph Setup

NOTE

> When changing the graph setup for admitted patients, the changes will not take effect until the patients are discharged or the settings are changed in the *Graph Setup* settings for each patient.

Locations – The *Default locations for this CIC* defaults are only used for telemetry beds. These defaults determine where patient data prints for either manual or alarm conditions. Since a telemetry patient is not linked to a monitor, such as a Solar 8000 monitor, these defaults are necessary to specify the destination for alarm and manual graph printouts.

The *Location* options are:

- *Manual Graph Location* —allows you to designate the default manual graph location for telemetry patients.
- *Alarm Graph Location* —allows you to designate the default alarm graph location for telemetry patients.
- *Print Window Location* —allows you to designate the default print window location for telemetry patients.

Waveform – Under the Graph Setup Waveform option you can designate the primary ECG lead for printing and enable/disable graphing for subsequent ECG leads.

The *Waveform* options are:

- *Graph Waveform ECG 1:*—allows you to designate the primary ECG lead for printing.
- *Graph Waveform 2 – 4*—allow you to enable/disable graphing for subsequent ECG leads. Choices are *Off, I, II, III, V, aVR, aVL,* and *aVF*.

Transmitter Graph – This option allows you to turn on/off transmitter graph printing.

Alarm Graph On/Off – This option allows you to turn on/off alarm graph printing.

Event Marker Graph On/Off – This option allows you to turn on/off event marker graph printing.

ECG

Display Lead – This option allows you to set the primary ECG lead for display in the patient's waveform window. Choices are I, II, III, V, aVR, aVL, and aVF.

Arrhythmia – This option allows you to enable/disable an arrhythmia analysis program. Choices are *Full*, *Lethal*, and *Off*.

Lead Analysis – This option allows you to designate Single-Lead or Multi-Lead analysis for ECG and arrhythmia analysis.

ST Analysis – This option allows you to enable/disable ST analysis. Choices are *On* or *Off*.

Va Lead/Vb Lead – This option allows you to set the default for the V leads that will be monitored in these positions. A 6-lead cable is required for multiple V-lead monitoring. Choices for Va are V1, V2, V3, V4, V5, and V6. Choices for Vb are V2, V3, V4, V5, and V6.

Detect Pace – This option allows you to enable/disable pacer detection. Choices are *Pace 1, Pace 2,* and *Off.*

PDS (CIC Pro Version 4.0.x and Later)

This option allows you to enable/disable use of the Patient Data server.

Patient Age, Transmitter Alarm Pause and Alarm Pause Breakthrough

Patient Age – This option allows you to set patient age. Choices are *0–2 Years*, *3–11 Years*, *11–13 Years*, and *Adult*.

Transmitter Alarm Pause – This option allows you to turn on/off transmitter alarm pausing. Choices are *Enabled*, *Disabled*, and *Off*.

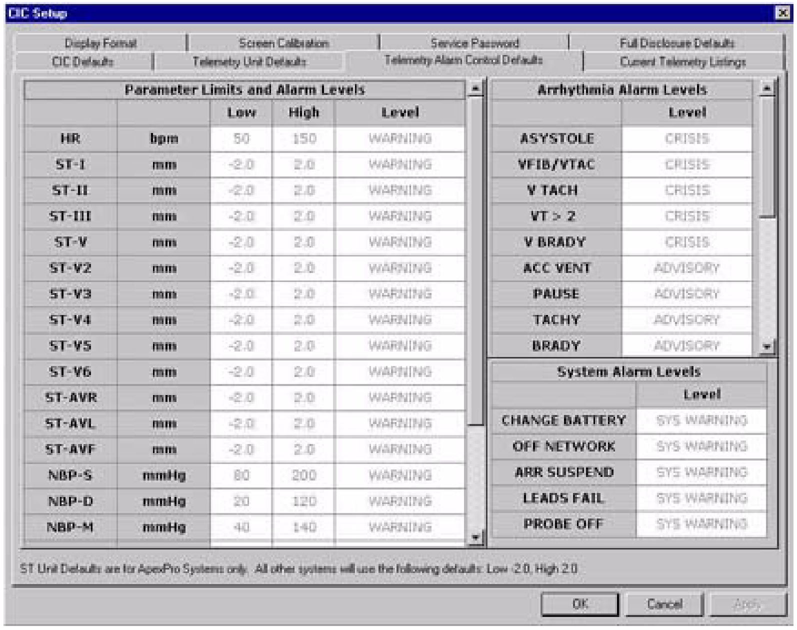
Alarm Pause Breakthrough – This option allows you to turn on/off transmitter pause breakthrough. Choices are *Always on* and *Always off.*

When finished, click *Apply* at the lower right corner of the screen to save the settings.

Event Marker – This option allows you to turn on/off event marker alert

Set the Telemetry Alarm Control Defaults

Open the Telemetry Alarm Control Defaults screen by clicking on the *Telemetry Alarm Control Defaults* tab.



Parameter Limits and Alarm Levels				
		Low	High	Level
HR	bpm	50	150	WARNING
ST-I	mm	-2.0	2.0	WARNING
ST-II	mm	-2.0	2.0	WARNING
ST-III	mm	-2.0	2.0	WARNING
ST-V	mm	-2.0	2.0	WARNING
ST-V2	mm	-2.0	2.0	WARNING
ST-V3	mm	-2.0	2.0	WARNING
ST-V4	mm	-2.0	2.0	WARNING
ST-V5	mm	-2.0	2.0	WARNING
ST-V6	mm	-2.0	2.0	WARNING
ST-AVR	mm	-2.0	2.0	WARNING
ST-AVL	mm	-2.0	2.0	WARNING
ST-AVF	mm	-2.0	2.0	WARNING
NBP-S	mmHg	80	200	WARNING
NBP-D	mmHg	20	120	WARNING
NBP-M	mmHg	40	140	WARNING

Arrhythmia Alarm Levels	
	Level
ASYSTOLE	CRISIS
VFIB/VTAC	CRISIS
V TACH	CRISIS
VT > 2	CRISIS
V BRADY	CRISIS
ACC VENT	ADVISORY
PAUSE	ADVISORY
TACHY	ADVISORY
BRADY	ADVISORY

System Alarm Levels	
	Level
CHANGE BATTERY	SYS WARNING
OFF NETWORK	SYS WARNING
ARR SUSPEND	SYS WARNING
LEADS FAIL	SYS WARNING
PROBE OFF	SYS WARNING

ST Unit Defaults are for ApexPro Systems only. All other systems will use the following defaults: Low -2.0, High 2.0

In user mode, all of the controls on the *Telemetry Alarm Control Defaults* tab sheet are view-only. You must be in the service mode to set default limits and alarm settings for telemetry patients.

NOTE

For more information on setting Telemetry Alarm Control Defaults, refer to the telemetry system's operator manual.

Parameter Limits and Alarm Levels

This option allows you to set default parameter alarms limits and alarm levels for the following parameters: HR, NBP-S, NBP-D, NBP-M, SPO2, SPO2-R, ST-I, ST-II, ST-III, ST-V, ST-V2, ST-V3, ST-V4, ST-V5, ST-V6, ST-aVR, ST-aVL, ST-aVF, and PVC**.**

Arrhythmia Alarm Levels

This option allows you to set default alarm levels for the following arrhythmia calls: ASYSTOLE, VFIB/VTAC, V TACH, V BRADY, VT>2, ACC VENT, PAUSE, TACHY, BRADY, R ON T, COUPLET, BIGEMINY, TRIGEMINY, PVC, IRREGULAR and ATRIAL FIB.

NOTE

The default alarm levels for ASYSTOLE and VFIB/VTACH cannot be moved from the Crisis level.

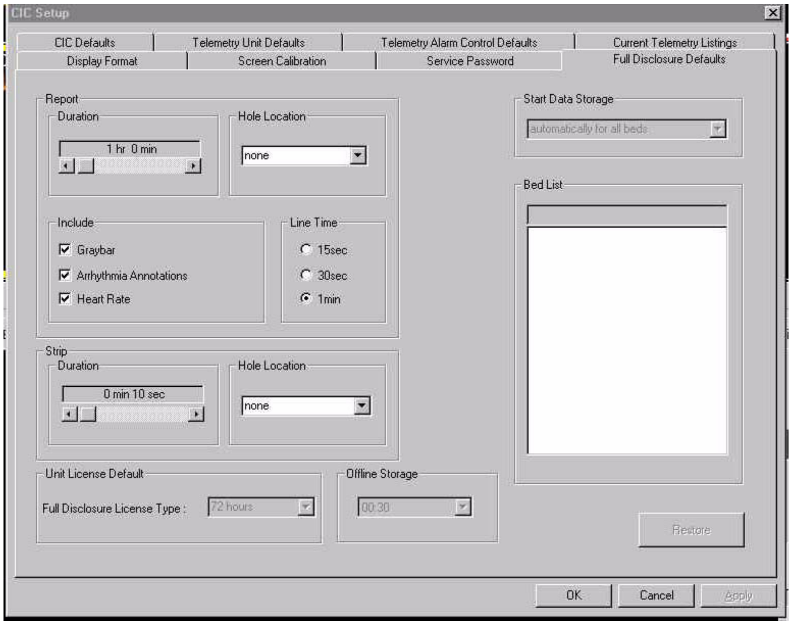
System Alarm Levels (CIC Pro Version 4.0.x and Later)

This option allows you to set default alarm levels for the following system alarms: CHANGE BATTERY, OFF NETWORK, ARR SUSPEND, LEADS FAIL, PROBE OFF.

When finished, click *Apply* at the lower right corner of the screen to save the Telemetry Alarm Control Defaults setting.

Set the Full Disclosure Defaults

Open the Full Disclosure Defaults screen by clicking on the *Full Disclosure Defaults* tab.


CIC Setup
CIC Defaults
Telemetry Unit Defaults
Telemetry Alarm Control Defaults
Current Telemetry Listings
Display Format
Screen Calibration
Service Password
Full Disclosure Defaults
Report
Strip
Bed List
Restore
OK
Cancel
Apply

Duration: 1 hr 0 min
Hole Location: none
Include:
☑ Graybar
☑ Arrhythmia Annotations
☑ Heart Rate
Line Time: ○ 15sec ○ 30sec ● 1min
Strip Duration: 0 min 10 sec
Hole Location: none
Unit License Default: Full Disclosure License Type : 72 hours
Offline Storage: 00:30
Start Data Storage: automatically for all beds

Report Duration

This option allows you to designate how much data is included in the report. The maximum report duration is 72 hours.

To set the report duration, place the cursor on the scroll bar below the *Report Duration* display field. Move the scroll bar to the left for shorter duration or to the right for longer duration.

Report Hole Location

This option allows space for binding printed reports. Options are *none, top, bottom, left*, and *right.*

Report Include

This option allows you to enable print characteristics. Options include *Graybar, Arrhythmia Annotations,* and *Heart Rate.* You may select all or none of these options.

- In *Graybar*, every other line of the report appears on a shaded background to provide visual differentiation from other lines.
- In *Arrhythmia Annotations*, the name of an applicable arrhythmia call appears

underneath its occurrence in the report.

- In *Heart Rate*, the last active heart rate included in the report appears at the end of the report line.

Report Line Time

This option allows you to designate how much data shows on an individual report line. Choices are *15sec, 30sec,* and *1min.*

Strip Duration

This option allows you to designate how much data is included in the strip. The maximum strip duration is 60 minutes.

To set the strip duration, place the cursor on the scroll bar below the *Strip Duration* display field. Move the scroll bar to the left for shorter duration or to the right for longer duration.

Strip Hole Location

This option allows space for binding printed report strips. Options are *none*, *top, bottom, left,* and *right.*

Start Data Storage

NOTE

You must be in the service mode to modify this setting.

This option allows you to designate how full disclosure is enabled for patients at the time of admission. Choices are *automatically for all beds, automatically if listed,* and *manually.*

Bed List

NOTE

You must be in the service mode to modify this setting.

This option shows a listing of beds for which full disclosure data is automatically stored.

Unit License Default: Full Disclosure License Type

NOTE

You must be in the service mode to modify this setting

This option shows a list of Full Disclosure license options. Choices are *none*, *24 hours*, *48 hours*, and *72 hours*.

NOTE

> If the default does NOT match the actual license, Full Disclosure does NOT work.

Offline Storage

The Full Disclosure Minute Rule exists as a precautionary measure when contact with a monitor has been lost. The feature is applied most often when the monitor is being used in the Rover application, since the monitor “roves” from room to room, on and off the network.

If a discharge/admit cycle occurs off the network for a bed that is being full disclosed, the Full Disclosure sub-system is unaware that the patient has changed. When the bed returns to the network, Full Disclosure will present the data from the discharged and admitted patients as part of the more recent patient's data. The Full Disclosure Minute Rule helps to prevent this by assuming that the patient has been discharged if the monitor is off the network for greater than the number of minutes selected with the *Offline Storage* control.

WARNING

POTENTIAL DATA LOSS — Do not allow a NO COMM (patient offline) event to exceed the time limit selected in the *Offline Storage* setting. The patient's full disclosure data is deleted if the time limit is exceeded.

To modify an offline storage time period, follow these steps.

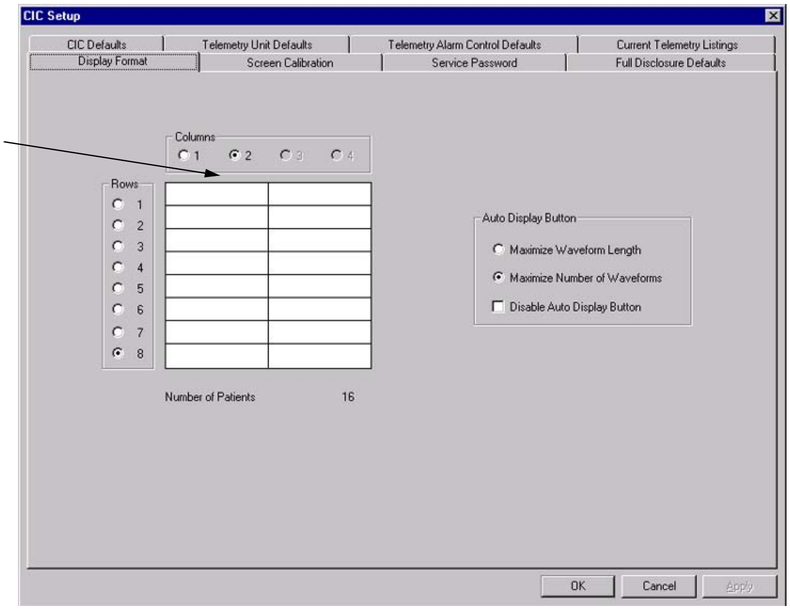
1. With the CIC Pro application running, select *Setup CIC* at the bottom of the screen.
2. Select the *Service Password* tab.
3. Type **mms_cic** at the password prompt. Press **Enter**.
4. Select the *Full Disclosure Defaults* tab.
5. Click the *Offline Storage* field. A down arrow icon is displayed next to the current offline time period.
6. Click on the down arrow to display a list of time periods and select the desired time period. Choices are 30 mins, 1, 2, 4, 8, and 12 hours.
7. A prompt appears. Select *Yes* if you are sure you want to change the offline storage time. The offline storage menu closes, with the selected time remaining visible.

Restore

This button allows you to clear any modifications made to the Full Disclosure tab sheet and revert to the previous settings.

Set the Display Format

Open the Display Format screen by clicking on the *Display Format* tab.


CIC Setup
CIC Defaults
Telemetry Unit Defaults
Telemetry Alarm Control Defaults
Current Telemetry Listings
Display Format
Screen Calibration
Service Password
Full Disclosure Defaults
OK
Cancel
Apply

“Map” of new display format

Columns
○ 1 ● 2 ○ 3 ○ 4

Rows
○ 1
○ 2
○ 3
○ 4
○ 5
○ 6
○ 7
● 8

Number of Patients 16

Auto Display Button
○ Maximize Waveform Length
● Maximize Number of Waveforms
☐ Disable Auto Display Button

The *Display Format* tab sheet allows you to format the clinical information center’s multiple patient viewer with the required number of patient windows.

NOTE

> Modifications to display format are subject to licensing restrictions. Licensing determines the number of beds displayed on the CIC Pro screen. Modifying the display to show more than the licensed number of beds will result in blank slots in the display.

Columns

This option allows you to designate the number of columns of patient windows in the multiple patient viewer.

Rows

This option allows you to designate the number of rows of patient windows in the multiple patient viewer.

Map of new display

This option reflects the current Columns/Rows selections graphically. When the Columns or Rows selections change, this map is immediately updated.

Auto Display Button

This option allows you to set the function of the *Auto Display* button in the Main Menu, or to disable it. Choices are *Maximize Waveform Length, Maximize Number of Waveforms,* and *Disable Auto Display Button.*

Changing the Display Format

To change the display format, follow these steps.

NOTE

You must remove admitted beds from the display before you can select a display format that would eliminate those patient slots from the display.

To do this, right-click the mouse pointer in the appropriate slot, and choose *None* from the *Select Care Unit then Bed Number* menu.

NOTE

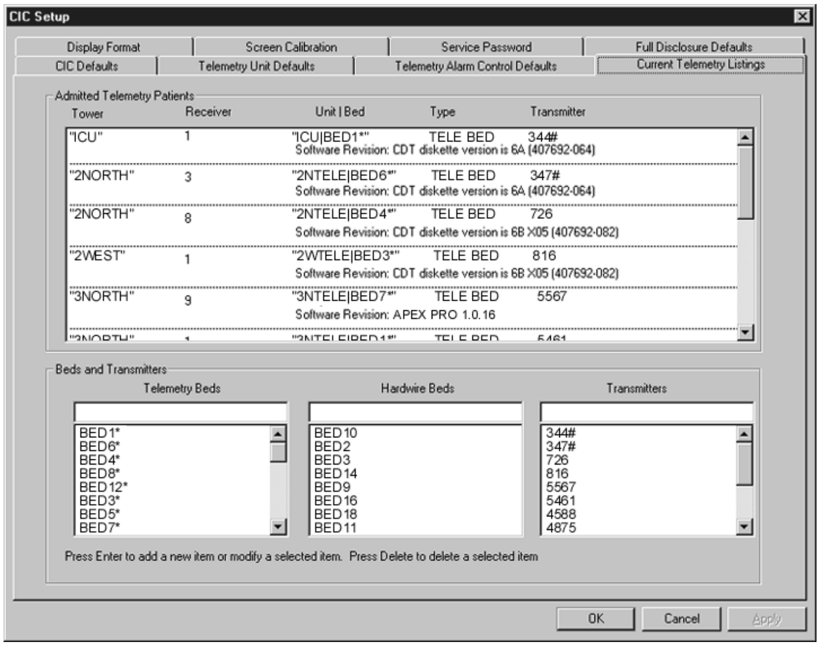
An alarm will sound when removing admitted beds from the display if the beds are not viewed on another CIC Pro.

1. Click on the selection corresponding to the number of columns you want in the multiple patient viewer.
2. Click on the selection corresponding to the number of rows you want in the multiple patient viewer.
3. Visually verify in the map of the new display that the new setting is what you want.

When finished, click *Apply* at the lower right corner of the screen to save the settings.

Set the Current Telemetry Listings

Open the Current Telemetry Listings screen by clicking on the *Current Telemetry Listings* tab.



Admitted Telemetry Patients

Tower	Receiver	Unit | Bed	Type	Transmitter
"ICU"	1	"ICU|BED1*" Software Revision: CDT diskette version is 6A (407692-064)	TELE BED	344#
"2NORTH"	3	"2NTELE|BED6*" Software Revision: CDT diskette version is 6A (407692-064)	TELE BED	347#
"2NORTH"	8	"2NTELE|BED4*" Software Revision: CDT diskette version is 6B X05 (407692-082)	TELE BED	726
"2WEST"	1	"2WTELE|BED3*" Software Revision: CDT diskette version is 6B X05 (407692-082)	TELE BED	816
"3NORTH"	9	"3NTELE|BED7*" Software Revision: APEX PRO 1.0.16	TELE BED	5567

Beds and Transmitters

Telemetry Beds	Hardwire Beds	Transmitters
BED1*	BED10	344#
BED6*	BED2	347#
BED4*	BED3	726
BED8*	BED14	816
BED12*	BED9	5567
BED3*	BED16	5461
BED5*	BED18	4588
BED7*	BED11	4875

Press Enter to add a new item or modify a selected item. Press Delete to delete a selected item

In user mode, the *Current Telemetry Listings* tab sheet is view-only. You must be in the service mode to make modifications to the telemetry settings.

Admitted Telemetry Patients

The *Admitted Telemetry Patients* control is for information only.

NOTE

> This overview covers the controls in a row. Each row contains information for one telemetry patient (sorted by TTX number).
>
> The second line of an entry shows the current software level for the patient bed in question.

- *Tower*—indicates which telemetry receiver cabinet (tower) this telemetry patient is communicating with.
- *Receiver*—indicates which receiver assembly inside the telemetry receiver cabinet this telemetry patient is communicating with.

  NOTE

  > The following information only applies to CDT-LAN with software versions prior to 6D, it does not apply to CDT-LAN software version 6D or ApexPro.

- *Unit|Bed*—indicates the unit and bed to which this patient has been assigned.
- *Type* —indicates the type of patient this is: *Tele Bed* or *Tele Combo*.
- *Transmitter*—indicates the identification number assigned to this patient's transmitter.

When finished, click *Apply* at the lower right corner of the screen to save the setting.

Bed and Transmitters

The *Bed and Transmitters* controls can only be modified from within service mode.

- *Telemetry Beds*—allows you to add, modify, or delete a telemetry bed name.
- *Hardwire Beds*—allows you to add, modify, or delete a hardwire bed name.
- *Transmitters*—allows you to add, modify, or delete a telemetry transmitter.

Enter a New Item

Enter a new item in a list as follows:

1. Position the cursor in the blank box at the top of the list.
2. Type in the desired information and press **Enter** to add the entry to the list.
3. When selections are complete, click *Apply* at the lower right corner of the screen to save the new settings.

Editing Entries

Edit existing entries as follows:

1. Locate the item in the scroll list.
2. When you click on the entry, it appears in the editing box.
3. Edit the information and press **Enter** to update the entry in the list.
4. When selections are complete, click *Apply* at the lower right corner of the screen to save the new settings.

   NOTE

   > Telemetry beds are distinguished from monitoring beds by an asterisk at the end of the bed number. When entering or editing information in the *Telemetry Beds* list, be sure to add an asterisk to the end of the bed name.

Lock or Unlock Beds

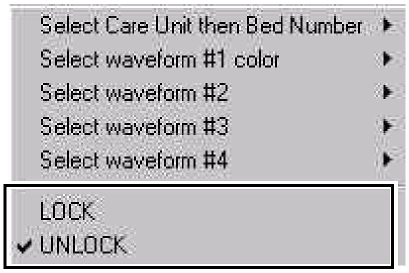
In the Service Mode, the clinical information center can be configured with the bed names either in locked or unlocked mode. When locked, the bed name is permanently allocated to a particular slot on the CIC Pro and users are unable to move the bed to another slot.

NOTE

It is possible to admit a patient to a window with a bed name that is locked to NONE. To avoid duplication of patient waveforms, a window locked as NONE should not be used to admit a patient.

To lock or unlock a bed:

1. Position the mouse pointer in the patient's waveform window.
2. Press the right mouse button to open the right-click menu.


Select Care Unit then Bed Number ▸
Select waveform #1 color ▸
Select waveform #2 ▸
Select waveform #3 ▸
Select waveform #4 ▸
LOCK
✓ UNLOCK

3. Check either *LOCK* or *UNLOCK*. The right-click menu closes, and the change takes effect immediately.

Browser Setup

WARNING

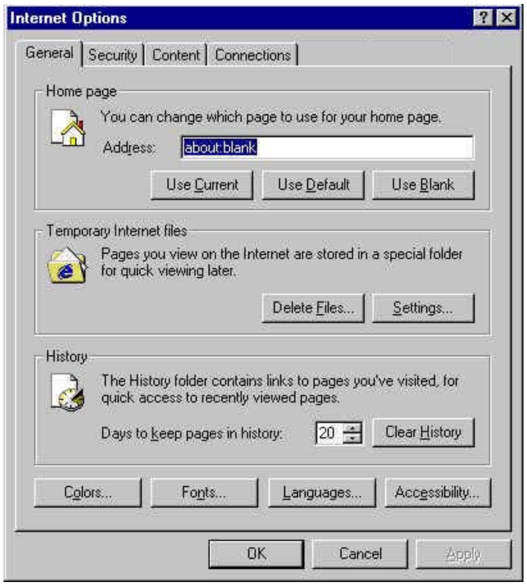
LOSS OF MONITORING — If the browser function is inappropriately used, loss of monitoring function may result. Use alternate monitoring devices or close patient observation until the monitoring function at the CIC Pro is restored.

When using the browser, follow these restrictions:

- Do NOT attempt to access the file systems of the CIC Pro through the use of the browser.
- Do NOT attempt to download files of any type. This includes, but is not limited to, audio or video files.

Configure Browser

1. With the CIC Pro running, click the *Browser* button at the top right corner of the multiple patient viewer window to start the Internet Explorer browser. *Select Tools > Internet Options*. The *Internet Options* window appears.


Internet Options
General
Security
Content
Connections
Home page
Use Current
Use Default
Use Blank
Temporary Internet files
Delete Files...
Settings...
History
Clear History
Colors...
Fonts...
Languages...
Accessibility...
OK
Cancel
Apply

You can change which page to use for your home page.

Address: about:blank

Pages you view on the Internet are stored in a special folder for quick viewing later.

The History folder contains links to pages you've visited, for quick access to recently viewed pages.

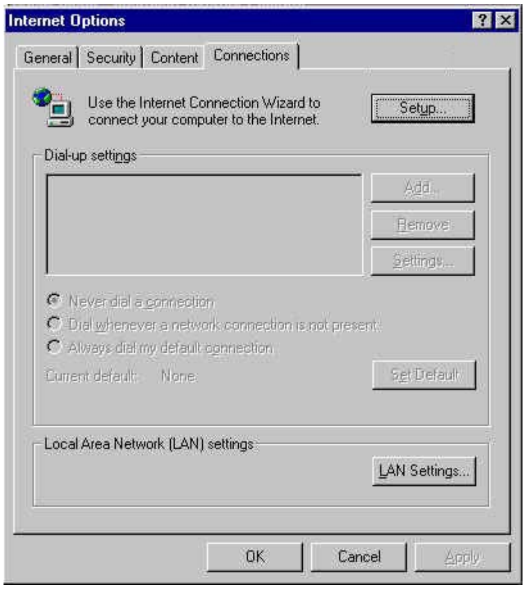
Days to keep pages in history: 20

2. In the *Address* field, in the *Home Page* section enter the internet address you want for your browser home page, or select *Use Blank*. Click *OK*.

NOTE

When Internet Explorer starts, the browser displays the specified *Home Page*.

3. If you use *Automatic configuration* or a *Proxy server*, then select the *Connections* tab and click on *LAN Settings...*


Internet Options
General
Security
Content
Connections
Setup...
Dial-up settings
Add...
Remove
Settings...
Set Default
Local Area Network (LAN) settings
LAN Settings...
OK
Cancel
Apply

Use the Internet Connection Wizard to connect your computer to the Internet.

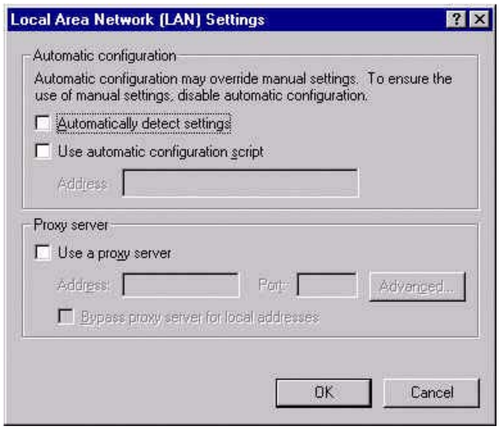
● Never dial a connection
○ Dial whenever a network connection is not present
○ Always dial my default connection

Current default: None

4. Enter the *Automatic configuration* script or *Proxy server* address and port per your hospital IT Administrator, then click *OK*

NOTE

> Before the browser can access internet web addresses (external to the hospital network), a connection for the Unity Network IX network to the internet is required. Contact your hospital IT Administrator.


Local Area Network (LAN) Settings
Automatic configuration
Address
Proxy server
Address:
Port:
Advanced...
OK
Cancel

Automatic configuration may override manual settings. To ensure the use of manual settings, disable automatic configuration.

☐ Automatically detect settings
☐ Use automatic configuration script
☐ Use a proxy server
☐ Bypass proxy server for local addresses

5. Proceed to “IP Address Configuration” on page 3-44.

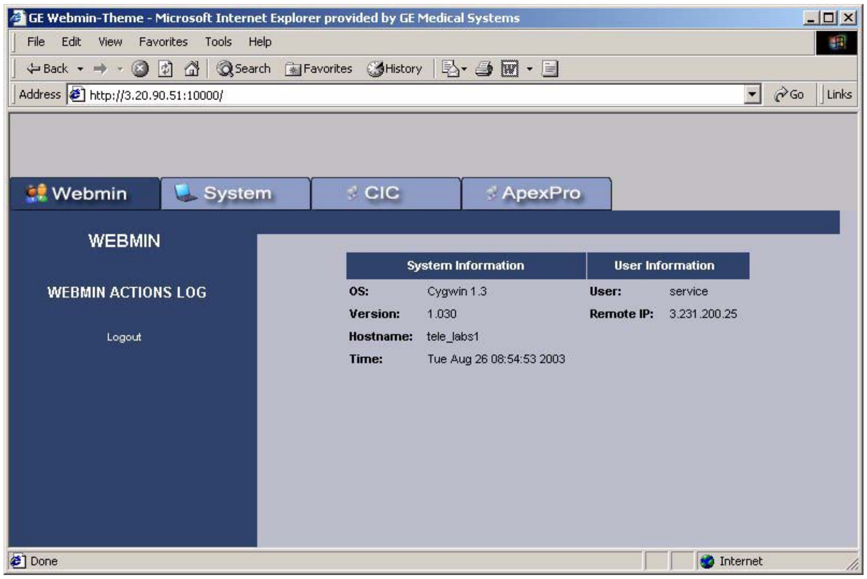
IP Address Configuration

WARNING

Duplicate IP addresses will cause erratic system communication and data loss! Be extremely careful not to assign the same IP address to two different devices.

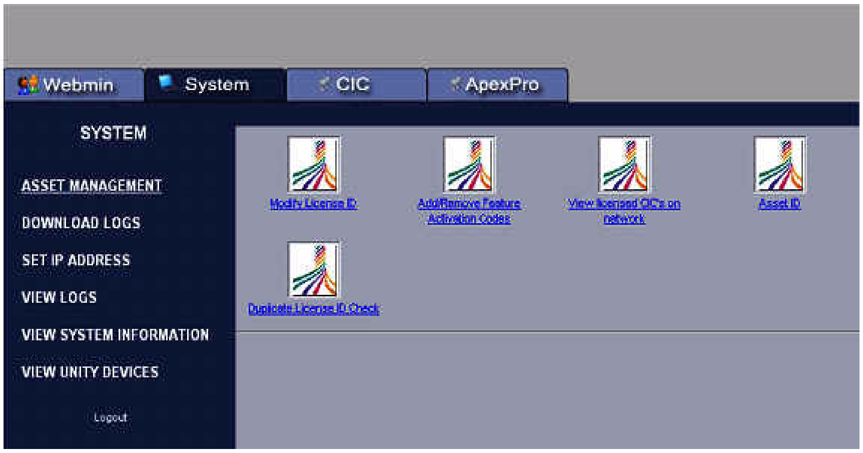
---

1. If the Internet Explorer browser is not already running: with the CIC Pro running, click the *Browser* button at the top right corner of the multiple patient viewer window to start the Internet Explorer browser.
2. Access the Webmin application according to "Local Webmin Access from the CIC Pro Computer" on page 7-3.
3. Log in to the Webmin application according to "Webmin Login" on page 7-3. The *Webmin* tab window displays.


GE Webmin-Theme - Microsoft Internet Explorer provided by GE Medical Systems
File
Edit
View
Favorites
Tools
Help
Back
Search
Favorites
History
Address
http://3.20.90.51:10000/
Go
Links
Webmin
System
CIC
ApexPro
WEBMIN
WEBMIN ACTIONS LOG
Logout
Done
Internet

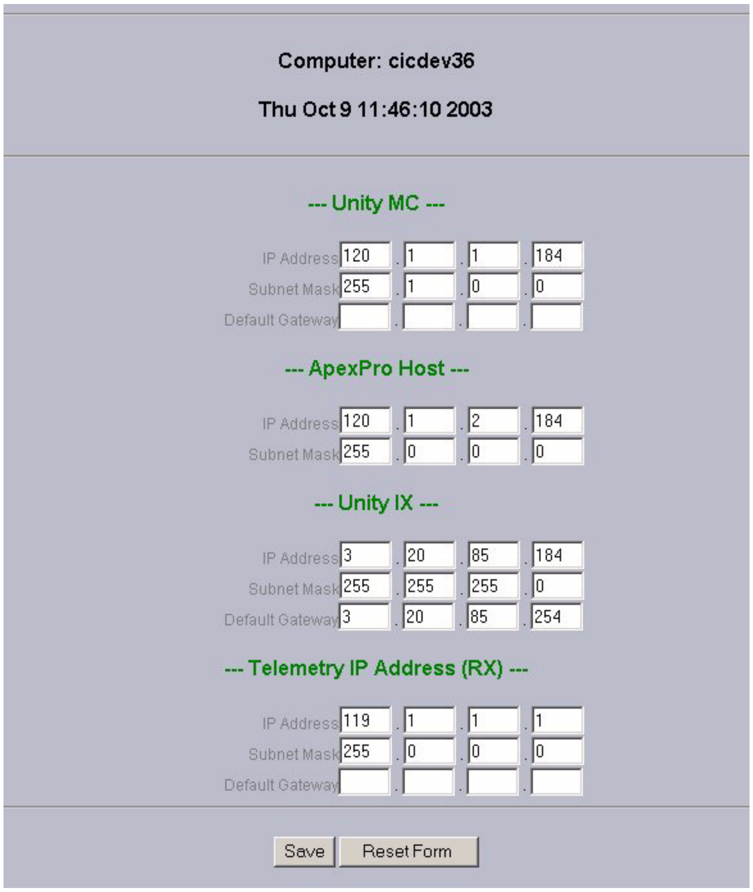
System Information		User Information	
OS:	Cygwin 1.3	User:	service
Version:	1.030	Remote IP:	3.231.200.25
Hostname:	tele_labs1		
Time:	Tue Aug 26 08:54:53 2003		

4. Click the *System* tab. The System tab window displays.


Webmin
System
CIC
ApexPro
SYSTEM
ASSET MANAGEMENT
DOWNLOAD LOGS
SET IP ADDRESS
VIEW LOGS
VIEW SYSTEM INFORMATION
VIEW UNITY DEVICES
Logout
Modify License ID
Add/Remove Feature Activation Codes
View licensed CIC's on network
Asset ID
Duplicate License ID Check

5. Click the *Set IP Address* link at the left side of the *System* tab window. The Set IP Address window displays.

NOTE
The Webmin *Set IP Address* page performs the same IP address configuration function as the *Windows Internet Protocol (TCP/IP) Properties* window.



Computer: cicdev36

Thu Oct 9 11:46:10 2003

--- Unity MC ---

IP Address 120 . 1 . 1 . 184
Subnet Mask 255 . 1 . 0 . 0
Default Gateway . . .

--- ApexPro Host ---

IP Address 120 . 1 . 2 . 184
Subnet Mask 255 . 0 . 0 . 0

--- Unity IX ---

IP Address 3 . 20 . 85 . 184
Subnet Mask 255 . 255 . 255 . 0
Default Gateway 3 . 20 . 85 . 254

--- Telemetry IP Address (RX) ---

IP Address 119 . 1 . 1 . 1
Subnet Mask 255 . 0 . 0 . 0
Default Gateway . . .

WARNING
Duplicate IP addresses will cause erratic system communication and data loss! Be extremely careful not to assign the same IP address to two different devices.

6. Enter the *Unity MC* and the *ApexPro Host IP Address*, *Subnet Mask* and *Default Gateway* settings per your hospital IT Administrator.

NOTE
Typically the *Unity MC* and the *ApexPro Host Subnet Mask* settings should remain 255.0.0.0. See your hospital IT Administrator

7. Enter the *Unity IX IP Address*, *Subnet Mask* and *Default Gateway* settings per your hospital IT Administrator.

NOTE

Typically the *Unity IX Subnet Mask* setting should remain 255.255.255.0. See your hospital IT Administrator.

NOTE

It is necessary to open the Unity IX IP address to the internet before the browser can access internet web addresses (external to the hospital network). Contact your hospital IT Administrator.

8. Enter the *Telemetry IP Address (RX) IP Address*, *Subnet Mask* and *Default Gateway* settings per your hospital IT Administrator.

NOTE

Typically the *Telemetry IP Address (RX) Subnet Mask* setting should remain 255.255.255.0. See your hospital IT Administrator.

9. Click *Save*.
10. Open the *Start* menu located in the lower left corner of the Windows NT main screen.
11. Select *Shutdown...* from the *Start* menu.
12. From the *Shut Down Windows* dialog, select *Restart*.

NOTE

You must restart the CIC Pro server for the new IP Address settings to take effect.

ApexPro Configuration

NOTE
If applicable, see the separate service or configuration documentation for your specific ApexPro installation for more, or different, ApexPro configuration information associated with your specific telemetry system.

Using the ptsconfig Utility

For the sake of troubleshooting and identifying what beds are admitted on any CIC Pro running ApexPro for multiple receiver systems, it helps to configure the ApexPro application running on the computer by using the *ptsconfig* utility.

Refer to "ApexPro PTSCONFIG Utility" on page 2-21 for descriptions of the ptsconfig commands.

Complete the following steps to configure the ApexPro application:

1. From the *Setup CIC* window, select Service Password and enter **mms_com**. Press **Enter**. The MS-DOS window opens.
2. At the c:\Program Files\Marquette\CIC\4.x> type **cd<space>..\..\pts\x.*x*** and press **Enter** (*x.x* = current software revision).
3. At **c:\Program Files\Marquette\pts\x.*x*>** type in **ptsconfig** and press **Enter**.
4. Type **modify unit**, press **Enter**, then type **APRO**, and press **Enter**.
5. Type **modify tower** and press **Enter**. Type in the name of the CIC Pro that the Receiver System is connected to.

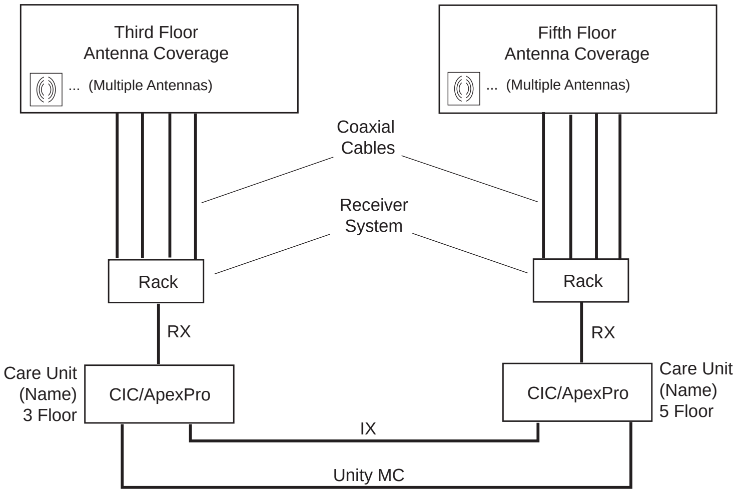
   Example: If the CIC Pro is named CIC1, then name the tower CIC1. This helps when troubleshooting and trying to identify where receivers are admitted to which PC.

6. Type in **display tower** and press **Enter** to verify that the unit and tower names where entered properly.

   Example: APRO|CIC1

7. If necessary, type **modify receiver** and press **Enter.**

   Example: A receiver rack containing 16 receivers is configured with 4 In some instances, it is necessary to assign receivers to particular care units. For example, a receiver system (rack) connected to a separate antenna system is installed, and only one Unity Network MC network ties all the CIC Pro/ApexPro systems together. The *ptsconfig* command "modify receiver" is used to associate specific care units to specific racks.


Third Floor
Antenna Coverage
... (Multiple Antennas)
Fifth Floor
Antenna Coverage
... (Multiple Antennas)
Coaxial
Cables
Receiver
System
Rack
Rack
RX
RX
Care Unit
(Name)
3 Floor
CIC/ApexPro
CIC/ApexPro
Care Unit
(Name)
5 Floor
IX
Unity MC

The “modify receiver” command allows:

- segmenting of receiver/antenna systems, and specific assignment of care units to those systems.
- a specific number of receivers to be assigned to specific care units. This explicitly dictates exactly which receiver racks, and how many receivers in those racks, can be assigned to a given care unit.
- configuration to allow specific care units access to unassigned receivers *(Use unassigned receivers? Y/N>)*. With this setting enabled (**Y**), the specified care unit can use any number of available receivers in the specified receiver rack, regardless of how many receivers have been explicitly assigned to that care unit.

When using the “modify receiver” command, all other care units that could utilize the remaining unassigned receivers in a rack should be added to the receiver list (*modify receiver* command). If this is not done, available unassigned receivers will not be used.

Example: A receiver rack containing 16 receivers is configured with 4 receivers explicitly assigned to the “3Floor” care unit. The *unassigned receivers* setting is enabled (**Y**) for the “3Floor” care unit. In this configuration, the “3Floor” care unit can use all 16 receivers available in the rack.

If other care units need access to unassigned receivers in the rack, those care units must also be added to the receiver list, explicate assigned a certain number of receivers, and configured to either use, or be restricted from using, unassigned receivers (*Use unassigned receivers? Y/N>*).

8. Press **Ctrl** +**]** to exit out of ptsconfig then close the MS–DOS window by typing **exit** at the prompt.

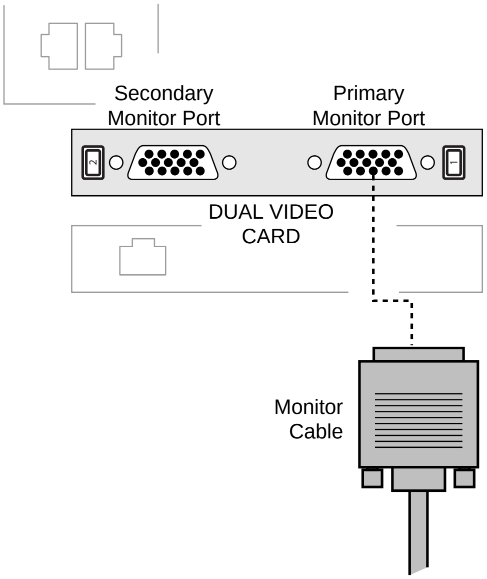
Dual Monitor Installation and Configuration

Dual Monitor Installation

The steps in this procedure MUST be performed in the order they appear. Failure to do so will cause video display malfunction. Repairing video malfunction of this nature will require a re-ghosting of the system.

There are very important steps in this procedure. They are marked as **VERY IMPORTANT**. Use verification section to verify that this key step was completed.

1. If applicable, shut down the CIC Pro computer.
2. Turn off the monitor, and any other peripheral devices connected to the CIC Pro computer.
3. Disconnect the video cable, and any other peripheral cables, from the ports on the back of the CIC Pro computer.
4. To configure the CIC Pro with dual monitors, remove the existing single display video card according to “Video Card Removal”, in the BCM Server Field Replacement Procedures chapter in the CIC Pro Clinical Information Center service manual.
5. If the dual monitor video card is not already installed, complete “Field Replacement Preparation” in the BCM Server Field Replacement Procedures chapter in the CIC Pro Clinical Information Center service manual.
6. Install the Matrox® Dual Monitor video card according to “Video Card Installation” in the BCM Server Field Replacement Procedures chapter in the CIC Pro Clinical Information Center service manual.
7. Connect only ONE monitor into the primary video port in the Matrox Dual Monitor video card.



NOTE

The video port on the right (when facing the back of the computer) is for the primary monitor. This port is used for the main (primary) CIC Pro multiple patient viewer window and when only one primary monitor is used with the computer.

8. **VERY IMPORTANT** - Verify that only ONE monitor is connected and that it is plugged into the primary video port in the Matrox Dual Monitor video card:
   - VERIFED (Verified by____________________Date _________)
   - VERIFED (Verified by____________________Date _________)
   - VERIFED (Verified by____________________Date _________)

9. Power on the monitor.

Dual Monitor Configuration

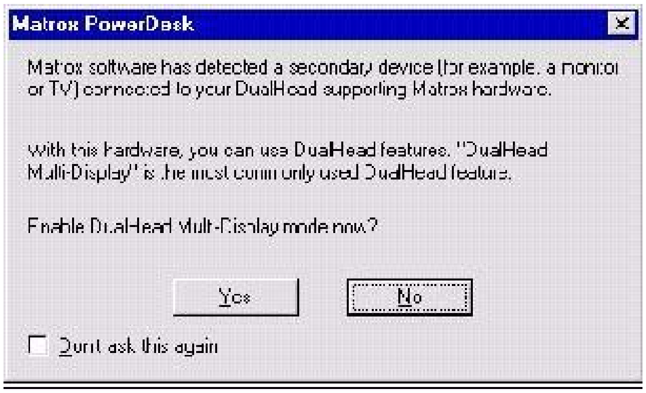
The steps in this procedure be performed in the order they appear. Failure to do so will cause video display malfunction. Repairing video malfunction of this nature will require a re-ghosting of the system.

There are very important steps in this procedure. They are marked as **VERY IMPORTANT**. Use verification section to verify that this key step was completed.

1. Shut down the CIC Pro computer.
2. Connect a second monitor to the remaining video port in the Matrox Dual Monitor video card.
3. Turn on the second monitor and the CIC Pro computer.
4. After the CIC Pro application starts, select *Setup CIC* at the bottom of the screen and select the *Service Password* tab.

NOTE

The Matrox PowerDesk-Matrox software has detected a secondary device window MAY display when the CIC Pro computer starts up with two monitors attached.



Matrox software has detected a secondary device (for example, a monitor or TV) connected to your DualHead supporting Matrox hardware.

With this hardware, you can use DualHead features. "DualHead Multi-Display" is the most commonly used DualHead feature.

Enable DualHead Multi-Display mode now?

VERY IMPORTANT - Do NOT click anywhere in this window. Proceed to step 8. This window will not display again after the CIC Pro is restarted.

5. Type the password **mms_com**. Press **Enter**.
6. At the command prompt, type **ConfigDualDisplay.exe**. Press **Enter**. The display area expands across both monitors and a blue icon displays on the secondary monitor in the Windows task bar, next to the clock.

7. Right-click the blue icon and select *Matrox Display Properties* from the pop-up menu. The *Matrox Display Properties* window displays.

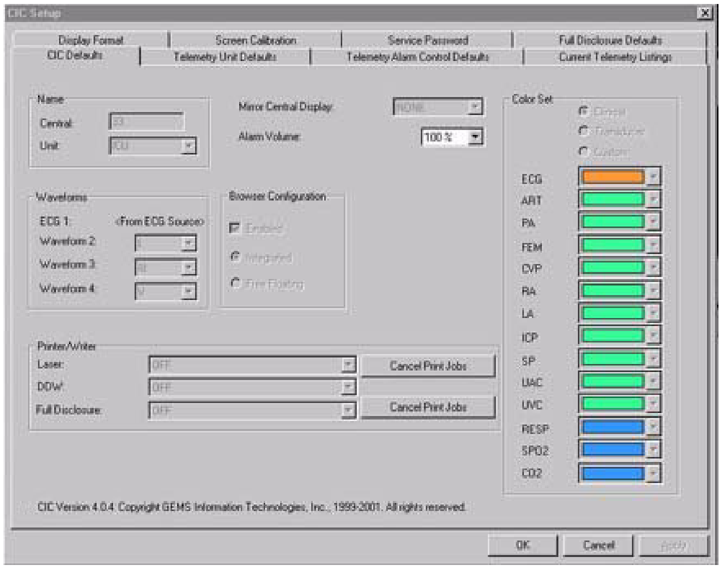
   NOTE

   Do NOT change any settings in the *Matrox Display Properties* window.

8. Click *OK* to close the *Matrox Display Properties* window.
9. Right-click the blue icon in the Windows task bar, next to the clock.
10. Select *Close Matrox QuickDesk*.
11. Click in the command prompt window to activate it, type **exit**. Press **Enter**.
12. Proceed to "Test Browser Function with Dual Monitors" on page 51.

Test Browser Function with Dual Monitors

1. With the CIC Pro application running, use the mouse to select *Setup CIC* at the bottom of the screen.
2. Select the *Service Password* tab.
3. Type **mms_cic** at the password prompt. Press **Enter**.
4. Select the *CIC Defaults* tab.


CIC Setup
Display Format
Screen Calibration
Service Password
Full Disclosure Defaults
CIC Defaults
Telemetry Unit Defaults
Telemetry Alarm Control Defaults
Current Telemetry Listings
Name
Central:
Unit:
Mirror Central Display:
Alarm Volume:
Color Set
Waveforms
Browser Configuration
Printer/Writer
Cancel Print Jobs
Cancel Print Jobs
OK
Cancel
Apply

Mirror Central Display: NONE

Alarm Volume: 100 %

ECG 1: <From ECG Source>

Browser Configuration: ☑ Enabled; ● Integrated; ○ Free Floating

Laser: OFF

DOW: OFF

Full Disclosure: OFF

Color Set: ECG 🟧, ART 🟩, PA 🟩, FEM 🟩, CVP 🟩, RA 🟩, LA 🟩, ICP 🟩, SP 🟩, UAC 🟩, UVC 🟩, RESP 🟦, SPO2 🟦, CO2 🟦

CIC Version 4.0.4 Copyright GEMS Information Technologies, Inc., 1999-2001. All rights reserved.

5. Click to enable the *Enabled* checkbox in *Browser Configuration* near the center of the window.
6. Click to select the *Free Floating* radio button.
7. Click *OK* to activate the new browser settings and close the *CIC Setup* window.
8. Click the *Browse* button at the top right corner of the CIC Pro multiple patient viewer window.
9. The browser should launch and display on the secondary monitor.

Removing One Monitor From a Dual Monitor System

If a monitor is removed from a dual monitor system, follow this procedure to configure the system for use with the single monitor only.

1. Open the *Start* menu located in the lower left corner of the Windows NT main screen.
2. Select *Shutdown...* from the *Start* menu.
3. Select *Shut down the computer?*. Wait for the message *It is now safe to turn off your computer*.
4. Press the power switch on the front of the computer to turn it off.
5. Turn off the secondary monitor and disconnect the video cable from the video port (the secondary monitor is connected to the video port on the left [when facing the back of the CIC Pro server computer]).

   NOTE

   Simply turning the secondary monitor power off will not remove it from the system. The secondary monitor cable MUST be disconnected from the video port on the back of the CIC Pro.

6. Turn on the computer (and the remaining monitor, if necessary). The CIC Pro application should start up and display correctly.
7. Click the *Browse* button at the top right corner of the CIC Pro multiple patient viewer window. The browser should display correctly integrated in the CIC Pro single patient viewer.
8. Shut the CIC Pro down, and power it back up twice (2 times).

In-Unit Incompatibility (CIC Pro v4.0.7 Only)

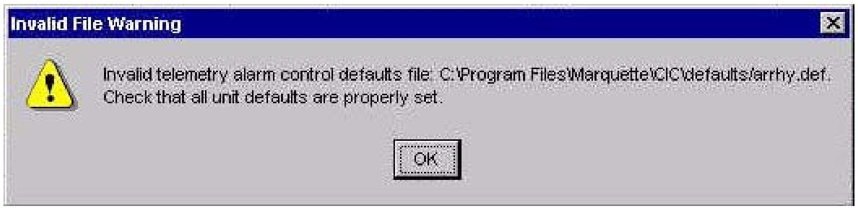
WARNING

(CIC Pro v4.0.7 Only) Care units running more than one CIC Pro must complete the procedure “Care Units with Multiple CIC Pros Telemetry Defaults Upgrade” **on page 3-53** after performing the upgrade procedure. Failure to perform this procedure creates a in-unit incompatibility situation which can result in lost or corrupted telemetry alarm defaults data and loss of audible alarms.

When a CIC Pro starts up, it will change certain configuration data to match other CIC Pros it finds on the care unit network.

Because of this, In a care unit with more than one CIC Pro, newly upgraded CIC Pros will revert to match the older CIC Pros still running in the care unit. This can result in lost or corrupted telemetry alarm defaults data and loss of audible alarms, as stated in the WARNING above.

The following *Invalid File Warning* message displays as evidence of this problem.



Invalid telemetry alarm control defaults file: C:\Program Files\Marquette\CIC\defaults/arrhy.def.
Check that all unit defaults are properly set.

The *Invalid File Warning* message will be displayed when tabs in the *Setup CIC* screen are selected.

Care Units with Multiple CIC Pros Telemetry Defaults Upgrade

In care units having more than one CIC Pro, and after all CIC Pros have been upgraded, check for the presence of *Atrial Fib* Arrhythmia Alarm Level:

1. From any CIC Pro in the care unit, select *Setup CIC* and click the *Telemetry Alarm Control Defaults* tab.
2. Check the end of the *Arrhythmia Alarm Levels* list for the *Atrial Fib* parameter.
   a. If the *Atrial Fib* parameter IS present, skip the remainder of this procedure.
   b. If the *Atrial Fib* parameter IS NOT present, continue with this procedure.
3. Select any CIC Pro in the care unit and disconnect it from the Unity Network MC network.
4. At that same CIC Pro, select *Setup CIC* and click the *Service Password* tab.
5. Type **mms_com** and press the **Enter** key.
6. At the *C:\Program Files\Marquette\CIC\4.0.x>* prompt, type **stop** and press the **Enter** key.
7. Type **del ..\defaults\arrhy.def** and press the **Enter** key. This deletes the defaults file for the CIC, which will be properly restored during the next step.

CAUTION

Make sure you type the string exactly as shown above. If the arrhy.def file is not deleted from the defaults directory, this procedure may have to be repeated.

If a message display stating the file was not found, and you typed the message properly, disregard the message.

8. Select *Start* > *Shut Down*, and select the *Close all programs and log on as a different user?* button. Allow the CIC Pro to restart normally.
9. Reconnect the CIC Pro to the Unity Network MC network.
10. Check the end of the *Arrhythmia Alarm Levels* list for the *Atrial Fib* parameter. If the *Atrial Fib* parameter is not present, repeat this procedure from the start.
11. Before other similar changes can occur at a different CIC Pro within the care unit that result in unit default changes, do the following:

   a. Select *Setup CIC* and click the *Service Password* tab.
   b. Type **mms_cic** and press the **Enter** key.
   c. Click the *Telemetry Alarm Control Defaults* tab.
   d. In the *Arrhythmia Alarm Levels* list, make note of the *Atrial Fib* parameter setting, change it, and then change it back,
   e. Click *Apply*. This will push the updated default settings out to all the remaining CIC Pros in the care unit.
   f. Click anywhere in the patient viewer. Click *Yes* when asked if you want to *Exit Service Mode*.

12. Move to a different CIC Pro in the care unit.
13. Select *Setup CIC* and click the *Telemetry Alarm Control Defaults* tab.
14. Check the end of the *Arrhythmia Alarm Levels* list for the *Atrial Fib* parameter. If the *Atrial Fib* parameter is not present, repeat steps 11 through 14.

Completion

Click on *Setup CIC* at the bottom of the screen and respond *Yes* to exit Service Mode. Proceed with the “Checkout Procedure” on page 4-14.

4 Maintenance

For your notes

Schedule

Manufacturer Recommendation

WARNING

Failure on the part of all responsible individuals, hospitals or institutions, employing the use of this device, to implement the recommended maintenance schedule may cause equipment failure and possible health hazards. The manufacturer does not in any manner, assume the responsibility for performing the recommended maintenance schedule, unless an Equipment Maintenance Agreement exists. The sole responsibility rests with the individuals, hospitals, or institutions utilizing the device.

To make sure the CIC Pro hardware remains in proper operational and functional order, a good maintenance schedule must be adhered to. The manufacturer recommends the following:

- **Visual Inspection:** This should be performed by service personnel upon receipt of the equipment, one time per year thereafter, and prior to servicing the unit.
- **Cleaning:** This should be performed by service personnel upon receipt of the equipment, one time per year thereafter, and each time the unit is serviced.
- **Calibration:** No calibration is required.
- **Electrical Safety Checks:** These should be performed by service personnel upon receipt of the equipment, one time per year thereafter, and each time the unit is serviced.
- **Checkout Procedure:** This should be performed by qualified service personnel upon receipt of the equipment, one time per year thereafter, and each time the unit is serviced.
- **Replacing the Hard Drive:** You should replace the hard drive every three years. Refer to “Nightshade Server Field Replacement Procedures” on page 5-1 or “BCM Server Field Replacement Procedures” on page 6-1 for hard drive replacement information.

PM Form

For the latest PM form regarding this product, contact GE Medical Systems *Information Technologies* Service. Make a copy of the GE Unity Network Information Suite Server PM form and use the copy to help guide you as you go through this section of the manual. The PM form can then be archived for reference after completion of all the steps required to completely test the equipment.

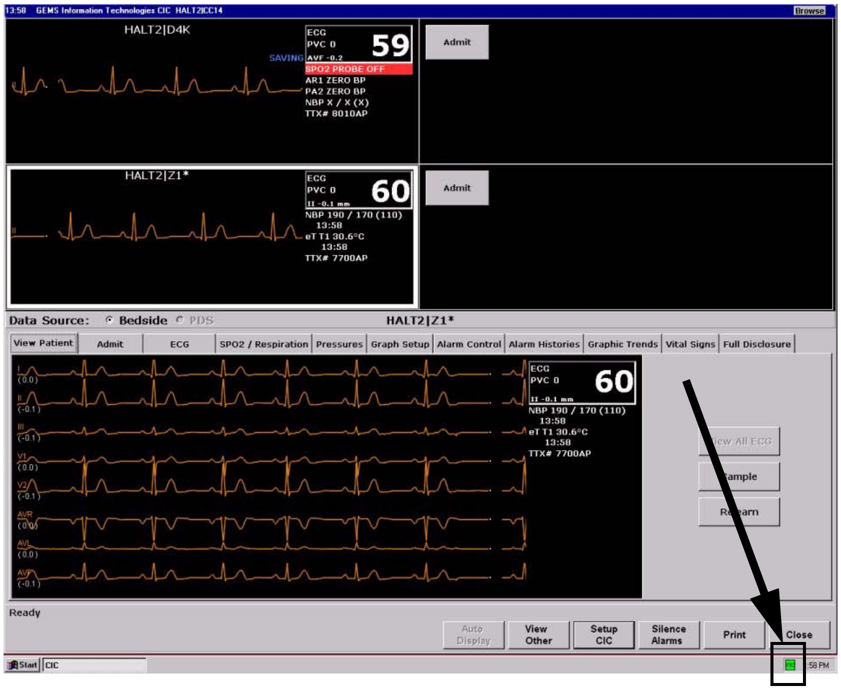
If, for any reason, any of the procedures or tests are not met to standards indicated, contact GE Medical Systems *Information Technologies* Technical Support (see “How to Reach Us...”).

System Resource Management

A system resource indicator is provided in the CIC Pro toolbar next to the clock at the bottom of the screen. This indicator provides real-time system resource usage information.

NOTE

Placing the cursor over the indicator reveals a tool-tip for the indicator.


13:58 GEMS Information Technologies CIC HALT2|CC14
Browse
HALT2|D4K
SAVING
ECG
PVC 0
AVF -0.2
59
SPO2 PROBE OFF
AR1 ZERO BP
PA2 ZERO BP
NBP X / X (X)
TTX# 8010AP
Admit
HALT2|Z1*
ECG
PVC 0
II -0.1 mm
60
NBP 190 / 170 (110)
13:58
eT T1 30.6°C
13:58
TTX# 7700AP
Admit
Data Source: Bedside PDS
HALT2|Z1*
View Patient
Admit
ECG
SPO2 / Respiration
Pressures
Graph Setup
Alarm Control
Alarm Histories
Graphic Trends
Vital Signs
Full Disclosure
View All ECG
Sample
Relearn
Ready
Auto Display
View Other
Setup CIC
Silence Alarms
Print
Close
Start
CIC
58 PM

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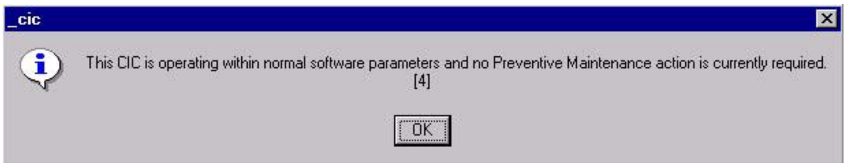
Double-clicking the system resource indicator displays current system resource information, along with a numeric value associated with accumulated CIC Pro time of use since the last system resource reset.

NOTE

The following figure shows system resource information for a green, or normal, condition.



This CIC is operating within normal software parameters and no Preventive Maintenance action is currently required.
[4]

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The system resource indicator should be checked periodically, and appropriate action should be taken. Until a typical system resource consumption rate is determined, the system resource indicator should be checked monthly.

Depending upon the color of the indicator, different actions are required:

System Resource Indicator	System Resource Condition	Action Required
Green	Normal — System resources are within normal parameters	No service action is currently required
Yellow — [value equal or greater than 300]	Advisory — System has been running continuously for at least 300 days without a system resource reset. System resources may be running low	Schedule a system resource reset
Yellow — [value less than 300]	Advisory — System resources are running low	Contact GE Medical Systems *Information Technologies* Service
Flashing Red — [value equal or greater than 365]	Low — System has been running continuously for at least 365 days without a system resource reset. System resources may be running low	Perform a system resource reset at the earliest possible opportunity as part of annual preventative maintenance
Flashing Red — [value less than 365]	Low — Available system resources are running critically low.	Contact GE Medical Systems *Information Technologies* Service

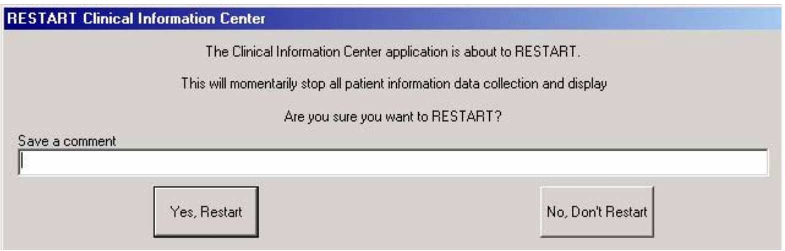
System Resource Reset

WARNINGS

LOSS OF MONITORING — Provide alternate patient monitoring or close observation before performing the system resource reset procedure. Beds displayed on the CIC Pro will not be monitored during the system resource reset.

After system resource reset is complete and the monitoring function at the CIC Pro has been restored (about 30 seconds), verify the correct monitoring state and alarm function.

1. Provide alternate patient monitoring for the beds displayed on the CIC Pro.
2. Press **Alt + F4**.
3. If desired, type a comment about the system resource reset event into the *Save a comment* field.



RESTART Clinical Information Center

The Clinical Information Center application is about to RESTART.

This will momentarily stop all patient information data collection and display

Are you sure you want to RESTART?

Save a comment

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4. Click *Yes, Restart*. The CIC Pro will restart, and monitoring function will be restored in approximately 30 seconds.
5. System resources are now fully restored and a green system resource indicator should be displayed.

Visual Inspection

About the Visual Inspection

Carefully inspect the PC and its components prior to installation, one time each year thereafter, and each time the equipment is serviced.

Procedure

To perform a complete visual inspection of the equipment, follow these steps:

1. **GENERAL INSPECTION:** Inspect the external surfaces of the computer components and display monitor for obvious physical damage. Do NOT use the device if physical damage is evident. Refer damaged equipment to qualified service personnel for repair.
2. **FANS:** Inspect all cooling fans in the computer tower to make sure they are in good working order and are not clogged with dust. These fans draw outside air into the tower to cool the components inside.
3. **CONNECTORS:** Inspect all external connectors for damaged pins, prongs and connector housings. Refer damaged equipment to qualified service personnel for repair. Ensure that all connections are properly seated and secure.
4. **CABLE INSULATION:** Inspect all cables, insulation, strain-reliefs and connectors for damage, cracks or degradation. Refer damaged equipment to qualified service personnel for repair.

Cleaning

General Rules

Following is a list of general rules for cleaning the equipment:

- Use a soft, lint-free cloth dampened with clean water to wipe down the external surfaces of the equipment,

CAUTION
Make sure water does not run into any of the openings of the equipment. An electrical shock hazard exists and/or the equipment can be damaged if water is allowed to get into the cabinets.

- Do NOT use aerosol liquid sprays, solvents, or abrasives.

Cleaning Procedure

To clean the equipment, follow these steps.

- Safely shutdown the unit. Remove power from all components and disconnect the power plugs (pull on the plug itself, not on the cord).

Server Internal Components

1. Turn off all peripheral devices connected to the server.
2. Make sure the server is shut down, then unplug the AC power cord from the back of the server or from the wall outlet.

WARNING
The on/off button (a convex button) on the front panel does not turn off the system AC power. To remove power from the server, you must unplug the AC power cord from the wall outlet or power cord connector on the server.

3. Remove the access panels on the server. Using a compressed air duster recommended for computers and electronics, carefully blow out any dust that may have accumulated on internal components.

For component level disassembly/reassembly information, refer to “Nightshade Server Field Replacement Procedures” on page 5-1 and “BCM Server Field Replacement Procedures” on page 6-1.

Fans

1. Clean the fans. The cooling fans generally accumulate the most dust.
2. Remove all of the dust from the fans and the fan intakes to maintain proper cooling.

Keyboard

Lightly wipe the keyboard with a clean, soft cloth dampened with water.

Mouse

The mouse contains a small ball that must roll smoothly for the mouse to work properly. You can keep this ball free of dirt and grease by using the mouse on a clean, lint-free surface and cleaning it occasionally.

You need a few cotton swabs and a clean, soft, lint-free cloth.

1. Turn off the server.
2. Turn the mouse upside-down and turn the plastic ring on the bottom *counterclockwise* to disengage it.
3. On some mouse devices, you may need to press the plastic ring (rather than turn it) to disengage it.
4. Turn the mouse right-side up with one hand and catch the ring and the ball with your other hand.
5. Clean the three small rollers inside the mouse with a cotton swab moistened with water. Rotate the rollers to clean all around them.
6. Wipe the mouse ball with a clean, soft, dry, and lint-free cloth.
7. If necessary, wash the mouse ball with warm, soapy water (use a mild soap such as a dish washing liquid) and then dry the mouse ball thoroughly.
8. Using a compressed air duster recommended for computers and electronics, blow into the mouse case to remove any dust that has collected there.
9. Put the ball and ring back in place.

Your mouse should roll smoothly across the mouse pad or desk. If it doesn't, repeat this procedure.

Display Screen

To clean the display screen, put household glass cleaner on a soft cloth and wipe the screen.

CAUTION

DO NOT spray the cleaner directly on the screen because the liquid might drip into the monitor or computer and cause damage to the equipment.

Electrical Safety Tests

General

Electrical safety tests provide a method of determining if potential electrical health hazards to the operator of the device exist.

These tests apply to the server, all peripherals, and their three-prong plugs.

Recommendations

To help you establish a systematic maintenance routine, GE Medical Systems *Information Technologies* recommends that you perform all safety tests presented in this chapter:

- Upon receipt of the device,
- Every twelve months thereafter,
- Each time the main enclosure is disassembled or a circuit board is removed, tested, repaired, or replaced, and
- Record the date and results on the "Repair Log" on page 4-19.

WARNING
Failure to implement a satisfactory maintenance schedule may cause undue equipment failure and possible health hazards. Unless you have an Equipment Maintenance Contract, GE Medical Systems *Information Technologies* does not in any manner assume the responsibility for performing the recommended maintenance procedures. The sole responsibility rests with the individual or institution using the equipment. *Information Technologies* service personnel may, at their discretion, follow the procedures provided in this manual as a guide during visits to the equipment site.

Test Conditions

Electrical safety tests may be performed under normal ambient conditions of temperature, humidity, and pressure.

Test Equipment

The manufacturer recommended test equipment required to perform electrical safety tests is listed below. Equivalent equipment may be substituted as necessary.

Required Tools/Equipment	
Item	Specifications
Leakage Current Tester	See figures below
Digital Multimeter (DMM)	resistance, AC voltage

Wall Receptacle Test

Before starting the tests, the wall receptacle from which the device will get electrical power must be checked. This test checks the condition of the wall receptacle to ensure correct results from leakage tests.

For international wall receptacles, refer to the internal standards agencies of that particular country. Use a digital multimeter to ensure the wall receptacle is wired properly.

If other than normal polarity and ground is indicated, corrective action must be taken before proceeding. The results of the following tests will be meaningless unless a properly wired wall receptacle is used.

Ground (Earth) Integrity

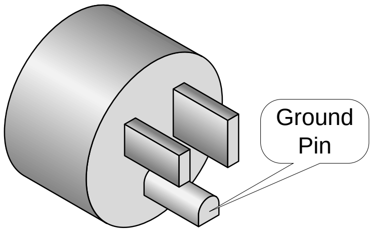
Listed below are two methods for checking the ground (earth) integrity, "Ground Continuity Test" and "Impedance of Protective Earth Connection". These tests determine whether the device's exposed metal and power inlet's earth (ground) connection has a power ground fault condition.

Perform the test method below that is required by your Country/Local governing safety organization.

Ground Continuity Test

Completion of this test is checked by the following steps:

1. Disconnect the DUT (device under test) from the wall receptacle.
2. Connect the negative (–) lead of the ohm meter to the protective earth terminal (ground pin in power inlet connector) or the protective earth pin in the MAINS PLUG (ground pin in power cord). Refer to the US 120VAC power cord figure below.



3. Set the DMM to measure Ohms.
4. Connect the positive (+) lead of the Ohm meter to all exposed metal surfaces on the DUT. If the metal surfaces are anodized or painted scrape off a small area in a inconspicuous area for the probe to make contact with the metal.
5. Resistance should read to pass:
   - 0.1 ohm or less to power inlet ground pin
   - 0.2 ohms or less to power cord ground pin

Impedance of Protective Earth Connection

This test, unlike a ground continuity test, will also stress the ground system by using special ground bond testers e.g. Kikusui (model 872 or TOS 6100) or Associated Research model HYAMP® Jr. Model 3030D.

This test normally is only required as a manufacturing production test to receive safety agency compliance (i.e. UL 60950).

Some country agency’s DO require this test after field equipment repairs (i.e. Germany’s DIN VDE 0751 standards).

Consult your country/local safety agency if in question.

Compliance is checked by the following steps:

1. A current not less than 10A and not exceeding 25 A from a current source with a frequency of 50 or 60 Hz with a no-load voltage not exceeding 6 V is passed for at least 5 s through the PROTECTIVE EARTH TERMINAL or the protective earth pin in the MAINS PLUG and each ACCESSIBLE METAL PART which could become LIVE in case of failure in BASIC INSULATION.
2. The voltage drop between the parts described is measured and the impedance determined from the current and voltage drop. It shall not exceed the values indicated.

For EQUIPMENT without a POWER SUPPLY CORD the impedance between the PROTECTIVE EARTH TERMINAL and any ACCESSIBLE METAL PART which is PROTECTIVELY EARTHED shall not exceed 0.1 ohms

For EQUIPMENT with a POWER SUPPLY CORD the impedance between the protective earth pin in the MAINS PLUG and any ACCESSIBLE METAL PART which is PROTECTIVELY EARTHED shall not exceed 0.2 ohms.

When taking this measurement, move the customer’s power cord around, no fluctuations in resistance should be observed.

Ground (Earth) Wire Leakage Current Tests

Perform this test to measure current leakage through the ground (earth) wire of the equipment during normal operation.

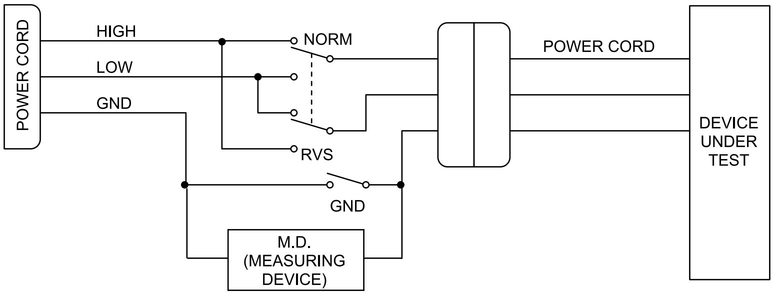
1. Set the leakage tester switches as follows:
   - Set the GND switch to **GND OPEN**.
   - Set the polarity switch to **NORM/FORWARD**.
   - Set the power switch to **OFF**.
2. Connect a digital multimeter (DMM) to the METER jacks on the leakage tester. Set the DMM to measure AC millivolts.
3. Connect the power cord of the device under test to the power receptacle on the rear of the leakage tester.

   NOTE:

   The device under test is to be tested at its normal operating voltage.

4. Set the leakage tester power switch to ON.
5. Set the power switch of the device under test to ON.
6. Read the current leakage indicated on DMM. If the reading is greater than 3.5 mA, the device under test fails and should be repaired and tested again.
7. Set the polarity switch on the leakage tester to RVS (reverse).
8. Read the current leakage indicated on DMM. If the reading is greater than 3.5 mA, the device under test fails and should be repaired and tested again.
9. Set the leakage tester power switch to OFF.

LEAKAGE TESTER
PARTIAL SCHEMATIC



NOTE

The MD (measuring device) is the circuitry defined by the appropriate standard for measuring leakage current.

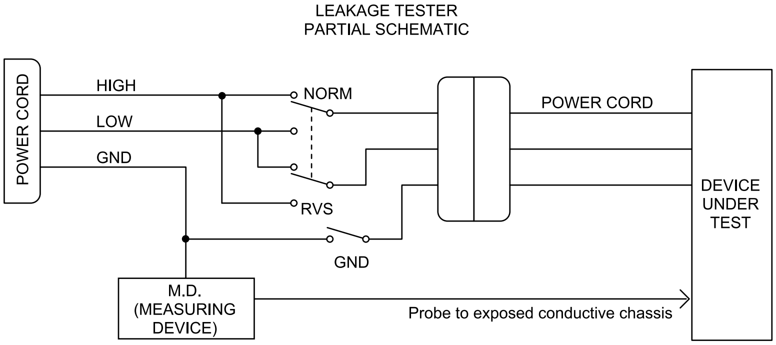
The measuring devices, defined by various standard organizations (IEC, UL, etc.), produce almost identical test measurement results.

Enclosure (Chassis) Leakage Current Test

Perform this test to measure current leakage through exposed conductive surfaces on the device under test during normal operation.

1. Set the leakage tester switches as follows:
   - GND switch - OPEN,
   - Polarity switch - NORM.
2. Connect a meter lead between the CHAS connector on the rear of the leakage tester and an unpainted, non-anodized chassis ground on the unit under test.
3. Set the leakage tester power switch to ON.
4. Read the current leakage indicated on DMM. If the reading is greater than 3.5 mA the device under test fails and should be repaired and tested again.
5. Set the polarity switch to RVS and observe the same meter readings as in the previous step.
6. Set the GND switch on the leakage tester to CLOSED.
7. Read the current leakage indicated on DMM. If the reading is greater than 3.5 mA the device under test fails and should be repaired and tested again.
8. Set the polarity switch to RVS and observe the same meter readings as in the previous step.

9. Set the polarity switch to NORMAL and observe the same meter readings as in the previous step.
10. Set the leakage tester power switch to OFF and remove the meter lead connected in step 2.


LEAKAGE TESTER
PARTIAL SCHEMATIC
POWER CORD
HIGH
LOW
GND
NORM
RVS
GND
POWER CORD
DEVICE
UNDER
TEST
M.D.
(MEASURING
DEVICE)
Probe to exposed conductive chassis

Test Completion

Disconnect all test equipment from the device. Disconnect the device power cord plug from the leakage tester power receptacle. Disconnect the leakage tester from the wall receptacle.

Checkout Procedure

About the Checkout Procedure

This part of the section contains all of the checkout procedures for the equipment. The checkout procedures provide service personnel with a method of verifying operational and functional performance of the equipment without having to disassemble the unit. Failure to attain the prescribed results indicates a need for calibration, configuration, or repair of the equipment.

Perform the checkout procedures upon receipt of the equipment, every year thereafter, and each time a component is removed or replaced.

The checkout procedures are based on the assumption that the equipment being tested is used with known, good cables. It also requires that the user be somewhat familiar with the operation of the system. For more information concerning the operation of these components, refer to the respective operator manual.

Instructions

Follow these instructions to completely test the system for proper function and operation.

CAUTION
All monitored beds must have a unit name assigned. Failure to assign a unit name will cause loss of data.

NOTE
You must close all files for this process to run. If the disk drive is currently in use, a message asks if you want to reschedule the disk checking for the next time you restart your system. Then, the next time you restart your system, disk checking runs. Your disk drive will not be available to run other tasks while this process runs.

General

1. To detect disk errors, you can run disk checking on your drives. To run disk checking:
   a. In *My Computer* or *Windows NT Explorer*, click the disk drive you want to check.
   b. On the *File* menu, click *Properties*.
   c. Select the *Tools* tab.
   d. Under *Error-checking*, click *Check Now.*
   e. Check both selections and click *Start*.

2. Check the keyboard to make sure all of the keys work properly and do not stick when pressed. If keys do stick, replace the keyboard.
3. Check the mouse to make sure the cursor follows mouse movements smoothly and the mouse buttons function properly. Refer to “Cleaning” on page 4-7 if necessary.

   NOTE

   Consult the *Computer Display Operating Instructions*, packaged with the computer display monitor, to complete steps 4-7.

4. Check out the computer monitor’s display screen for proper contrast and color and adjust as necessary for best viewing in the environment in which the monitor is normally viewed.
5. Check out the computer monitor’s display screen focus and adjust as necessary to obtain best viewing.
6. Check out the computer monitor’s display screen for correct horizontal and vertical linearity and adjust as necessary.
7. Check out the computer monitor’s display screen for correct horizontal and vertical position and adjust as necessary.
8. If equipped with a service modem, call GE Medical Systems *Information Technologies* Technical Support and verify that the service modem allows the technicians access to the system. (See “How to Reach Us...”.)

CIC Pro Only

Verify Audio

WARNING

CIC Pro audible alarms will not sound for patients with bedside monitoring devices configured to “Operating Room” mode.

To test the audio output of your CIC Pro system:

NOTE

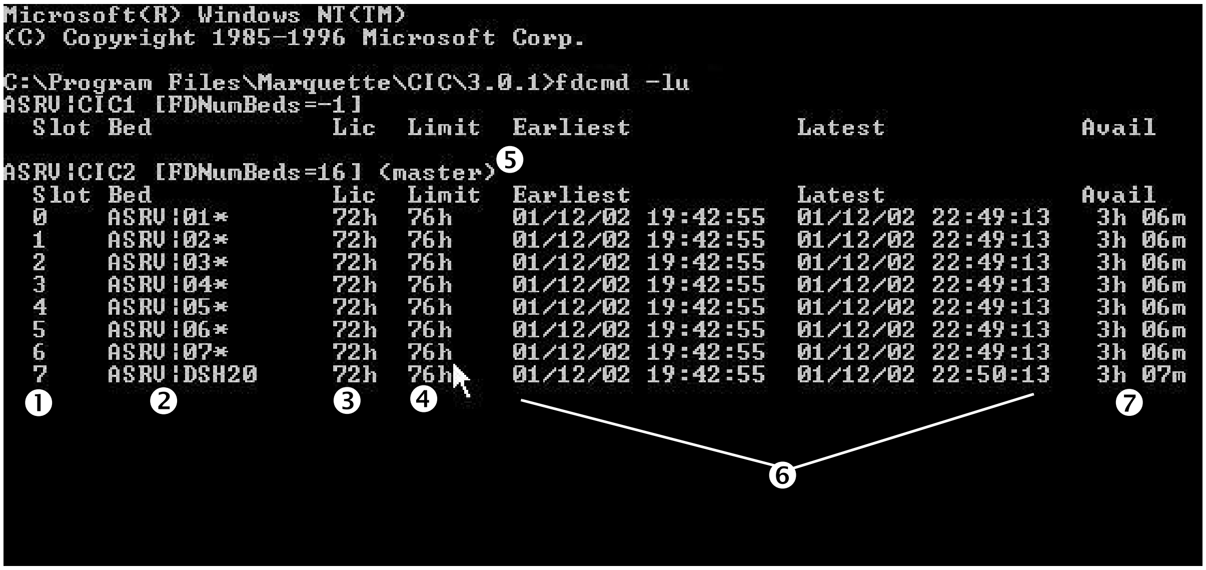
Active alarms override this test.

1. Select the Patient View window.
2. Select the *Alarm Control* tab.
3. Select the *Alarm Help* button.
4. Select the *Advisory Alarm* button.
5. Verify you can hear an audio tone from both speakers.
6. Select the *Close* button in the lower right corner of the screen.
7. To verify access to all care units:
   a. Select the *View Other* button.
   b. Verify that the current list is complete.

Verify Full Disclosure

Verify that all admitted beds in the care unit are full disclosed with the correct license type.

1. Select *Setup CIC* > *Service Password* and type **mms_com**.
2. At the DOS Window type **fdcmd -lu** and press the **Enter** key The utility may take several seconds to execute (allow up to two minutes after boot up or after changing the Full Disclosure License type).
3. If the Full Disclosure Licenses type has been changed, verify that all the beds are being full disclosed and that the correct license type is used for the admitted beds. Refer to the figure below for an explanation of the fdcmd -lu command.



```
Microsoft(R) Windows NT(TM)
(C) Copyright 1985-1996 Microsoft Corp.

C:\Program Files\Marquette\CIC\3.0.1>fdcmd -lu
ASRV¦CIC1 [FDNumBeds=-1]
  Slot Bed            Lic  Limit  Earliest           Latest             Avail

ASRV¦CIC2 [FDNumBeds=16] (master)
  Slot Bed            Lic  Limit  Earliest           Latest             Avail
  0    ASRV¦01*       72h  76h    01/12/02 19:42:55  01/12/02 22:49:13   3h 06m
  1    ASRV¦02*       72h  76h    01/12/02 19:42:55  01/12/02 22:49:13   3h 06m
  2    ASRV¦03*       72h  76h    01/12/02 19:42:55  01/12/02 22:49:13   3h 06m
  3    ASRV¦04*       72h  76h    01/12/02 19:42:55  01/12/02 22:49:13   3h 06m
  4    ASRV¦05*       72h  76h    01/12/02 19:42:55  01/12/02 22:49:13   3h 06m
  5    ASRV¦06*       72h  76h    01/12/02 19:42:55  01/12/02 22:49:13   3h 06m
  6    ASRV¦07*       72h  76h    01/12/02 19:42:55  01/12/02 22:49:13   3h 06m
  7    ASRV¦DSH20     72h  76h    01/12/02 19:42:55  01/12/02 22:50:13   3h 07m
```

❶	Up to 16 FD slots per CIC Pro.
❷	Shows Unit|Bed name of the bed being Full Disclosed.
❸	Identifies that a license was pulled from FlexLM and matches the Full Disclosure license type. 1hr is displayed if no licenses and Full Disclosure License type is set to NONE.
❹	Displays the maximum amount of time that data is available in the database.
❺	Identifies who is the FD Master within the care unit.
❻	Shows earliest and latest time of data collected. If the date shown as 01/01/70, then data not being collected. Run fdcmd –lu command again to view changes.
❼	Shows the amount of data collected thus far. In this example, only 3 hours of data is collected and it will max out at 76 hours.

Verify Each CIC Pro Can Print a Full Disclosure Report

1. View an admitted patient from the single viewer screen.
2. Select the *Full Disclosure* tab and verify waveforms appear. (Full Disclosure data will not appear for approximately 2-minutes for newly admitted patients).
3. Select *Print Report* and modify the report for a one-page report and select print.
4. Verify the Full Disclosure report printed out at the laser printer (repeat this step for every CIC Pro within the unit).

Check for In-Unit Incompatibility Messages (CIC Pro v4.0.7 Only)

Perform the "In-Unit Incompatibility (CIC Pro v4.0.7 Only)" check on page 3-52 for every CIC Pro in the care unit.

Verify PS Printer Drivers are Installed

To verify PS printer drivers are installed, complete this procedure. The following HP LaserJet series PS drivers are supported:

- HP LaserJet 4000 Series PS
- HP LaserJet 4050 Series PS
- HP LaserJet 4100 PS
- HP LaserJet 4200 PS (for HP LaserJet series 4200N AND 4250N printers)

> NOTE
>
> There is no unique printer driver for the HP LaserJet 4250N printer; use the HP LaserJet 4200 PS printer driver.

1. If you are not logged in as "administrator":
    a. Select *Setup CIC* and click on the *Service Password* tab.
    b. Type **mms_com** and press the **Enter** key. The *GEMS Information Technologies CIC* command window opens with the prompt: **C:\Program Files\Marquette\CIC\***4.x***>**
    c. Type **stop** and press the **Enter** key.
    d. Select *Start* > *Shut Down*, then click the *Close all programs and log on as a different user* button.
    e. Press and hold **Shift** and click on the *Yes* button. Continue to hold **Shift** until you get a log on screen.
    f. Type **administrator**, press the **Tab** key and type **admin1,3,5,7** (all lowercase, with no spaces). Press the **Enter** key; this logs you onto the system as the administrator.
2. Select *Start* > *Settings* > *Printers*.
3. In the *Printers* dialog box, the printers configured for the CIC Pro display.
4. For each printer, follow these steps:
    a. Right click the printer and select *Properties*.
    b. In the *Properties* dialog box, select the *General* tab.
    c. If the driver listed is a PCL driver, delete this printer.

NOTE

To delete a printer with a PCL driver from the *Printers* dialog box, select the printer and select *Delete*.

d. Close the dialog box.

ApexPro Only

NOTE

If applicable, see the separate service or configuration documentation for your specific ApexPro installation for more, or different, ApexPro testing information associated with your specific telemetry system.

1. At the CIC Pro with ApexPro, select *Setup CIC*.
2. Select the *Service Password* tab.
3. Type the password **mms_com**, then press **Enter**.
4. An MS-DOS command window opens and displays the prompt:

   *c:\Program Files\Marquette\CIC\**x.x***

   (***x.x*** = ApexPro software version)
5. Type **cd<Space>..\..\pts*x.x*** and press **Enter.**
6. Verify the prompt

   *c:\Program Files\Marquette\PTS\**x.x***
7. Type **ptsconfig** and press **Enter**.
8. Type **display receiver** and press **Enter**.
9. Note the number of unassigned receivers and subtract this number from the number of admitted beds noted above.

   The number of beds correlates to the number of receivers indicated by the number of green **Receiver Slots** LEDs on the back of the Receiver System. Four receivers per one green **Receiver Slots** LED.

   1 LED = 4 receivers

   2 LEDs = 8 receivers

   3 LEDs = 12 receivers

   4 LEDs = 16 receivers

Repair Log

A repair log is included for your convenience to record the repair history of this product.

Unit Serial Number:
Institution Name:

Date	Maintenance/Repair	Technician

For your notes

5

Nightshade Server Field Replacement Procedures

For your notes

Field Replacement Preparation

Only a qualified service technician should perform the procedures in this chapter. Observe these safety guidelines before removing the system side cover to work inside the server.

1. Turn off all peripheral devices connected to the server.
2. Make sure the server is shut down, then unplug the AC power cord from the back of the server or from the wall outlet.

WARNING
The on/off button (a convex button) on the front panel does not turn off the system AC power. To remove power from the server, you must unplug the AC power cord from the wall outlet or power cord connector on the server.

3. Label and disconnect all peripheral cables and telecommunication lines connected to the I/O connectors or ports at back of the server.
4. Provide electrostatic discharge (ESD) protection by wearing an antistatic wrist strap attached to the chassis ground of the system (any unpainted metal surface) when handling components.

Nightshade Server Hard Drive Replacement

This procedure takes about one hour to complete.

Overview

1. If the HDD is still functioning, "Record Configuration Information" on page 5-4.
2. "Remove and Install Nightshade Server Hard Drive" on page 5-8.
3. Upgrade with the appropriate software upgrade kit.
   - "Install Gold Drive Image" on page 5-10.
   - "Install Gold Drive Image" on page 5-10.
4. "Install Gold Drive Image" on page 5-10.
5. "Configure Gold Drive to Product Drive (G2P)" on page 5-10

Record Configuration Information

NOTE

Alternately, for CIC Pro Version 4.0.7 and later, the Webmin utility can be used instead of the information access procedures described in this section. Refer to Chapter 7, "Webmin Application" starting on page 7-1.

Before you replace the hard drive it is necessary to record certain configuration information to re-enter later in this procedure. Use the following procedure to record the information.

1. Select *Setup CIC* at the bottom of the screen.
2. From the *CIC Setup* screen, select the *Service Password* tab.
3. In the *Password* field type in the following text:

   mms_com <**Enter**>

The *GE Marquette Clinical Information Center* command window opens. The title bar of this window should be blue to indicate it is active. If not, place cursor inside this window and click to make it active.

NOTE

Software version "4.x" is used only as an example in the prompt and directory strings. The current software version found in the lower left hand corner of the *CIC Setup* screen should display in this string.

The displayed prompt should be
"C:\Program Files\Marquette\CIC\4.x>"

4. With the cursor at the end of the text string type **set** and press **Enter**. The "set command" information appears. (See following example pages.)
5. Record the *COMPUTERNAME*, *LANG*, *PCTYPE*, and *PRODID* (NT license number from certification) information for the CIC Pro you are upgrading.

6. Type **ipconfig<space>/all** and press **Enter**. The “ip config /all” information appears. (See following example pages.) Record the IP Address information for the CIC Pro you are upgrading.
7. Type **stop** then press **Enter** at the command prompt.
8. Open the *Start* menu and select *Shut Down*.
9. Select *Shut down the Computer?* and click *Yes*.
10. Wait for the message *It is now safe to turn off your computer*.
11. Press the on/off button to shut down the computer.

Set Command Example Page

```
Microsoft(R) Windows NT(TM)
(C) Copyright 1985-1996 Microsoft Corp.

C:\Program Files\Marquette\CIC\x.x>set
CIC_PATH=C:\Program Files\Marquette\CIC\2.0.17
COMPUTERNAME=cic000016230
ComSpec=C:\WINNT\system32\cmd.exe
DMI_SIA_PATH=C:\Program Files\Intel\ISC\CI
HOMEDRIVE=C:
HOMEPATH=\
ISCPATH=C:\Program Files\Intel\ISC
IXIPADDRESS=121.0.16.230
LANG=English
LOGONSERVER=\\cic000016230
MCIPADDRESS=126.1.205.17
NEWNAME=cic000016230
NUMBER_OF_PROCESSORS=2
OS=Windows_NT
Os2LibPath=C:\WINNT\system32\os2\dll;
Path=C:\Program Files\Marquette\CIC\2.1.1;C:\WINNT\SYSTEM32;C:\WINNT;C:\PROGRAM FILES\INTEL\ISC;C:\P
ROGRAM FILES\INTEL\ISC\MI;C:\PROGRAM FILES\INTEL\ISC\CI;C:\WINNT\SYSTEM32\DMI\BIN;C:\Program Files\M
arquette\US\bin;C:\flexlm\bin
PATHEXT=.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH
PCTYPE=Nightshade
PROCESSOR_ARCHITECTURE=x86
PROCESSOR_IDENTIFIER=x86 Family 6 Model 5 Stepping 2, GenuineIntel
PROCESSOR_LEVEL=6
PROCESSOR_REVISION=0502
PRODID=30097OEM002722122057
PROMPT=$P$G
SU_USERNAME=administrator
SystemDrive=C:
SystemRoot=C:\WINNT
TEMP=C:\TEMP
TMP=C:\TEMP
UNIONSTATION=C:\Program Files\Marquette\US
USBIN=C:\Program Files\Marquette\US\bin
USCFG=C:\Program Files\Marquette\US\cfg
USERDOMAIN=cic000016230
USERNAME=CIC
USERPROFILE=C:\WINNT\Profiles\cic
USLOG=C:\Program Files\Marquette\US\log
WIN32DMIPATH=C:\WINNT\System32\DMI
windir=C:\WINNT

C:\Program Files\Marquette\CIC\2.1.1>
```

Computer Name ______________________________

Language ___________________________________

PC Type ____________________________________

Product ID __________________________________

Nightshade Server IP Config /All Example Page

```
C:\Program Files\Marquette\CIC\x.x>ipconfig /all

Windows NT IP Configuration

        Host Name . . . . . . . . . : cic000016230
        DNS Servers . . . . . . . . :
        Node Type . . . . . . . . . : Broadcast
        NetBIOS Scope ID. . . . . . :
        IP Routing Enabled. . . . . : No
        WINS Proxy Enabled. . . . . : No
        NetBIOS Resolution Uses DNS : No

Ethernet adapter E100B1:

        Description . . . . . . . . : Intel EtherExpress PRO PCI Adapter
        Physical Address. . . . . . : 00-90-27-F6-84-40
        DHCP Enabled. . . . . . . . : No
         IP Address. . . . . . . . . : 126.1.205.18 (ApexPro Host)
        Subnet Mask . . . . . . . . : 255.0.0.0
        IP Address. . . . . . . . . : 126.1.205.17 (MC)
        Subnet Mask . . . . . . . . : 255.0.0.0
        Default Gateway . . . . . . :

Ethernet adapter El90x2:

        Description . . . . . . . . : 3Com 3C90x Ethernet Adapter
        Physical Address. . . . . . : 00-50-DA-15-75-3D
        DHCP Enabled. . . . . . . . : No
        IP Address. . . . . . . . . : 119.1.1.2 (RX)
        Subnet Mask . . . . . . . . : 255.0.0.0
        Default Gateway . . . . . . :

Ethernet adapter El90x3:

        Description . . . . . . . . : 3Com 3C90x Ethernet Adapter
        Physical Address. . . . . . : 00-50-DA-15-75-3D
        DHCP Enabled. . . . . . . . : No
        IP Address. . . . . . . . . : 121.186.102.52 (IX)
        Subnet Mask . . . . . . . . : 255.0.0.0
        Default Gateway . . . . . . :

C:\Program Files\Marquette\CIC\2.1.1>exit
```

MC IP Address ______________________________

IX IP Address ______________________________

IX IP Subnet Mask Address____________________

RX IP Address ______________________________

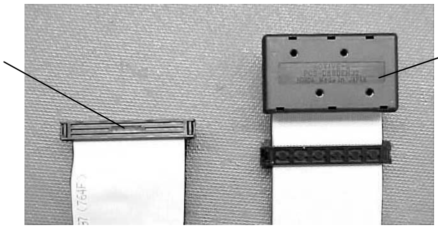
ApexPro Host IP Address ______________________

NOTE: This information is also recorded on labels on the top front of the CIC tower.

Remove and Install Nightshade Server Hard Drive

Hard Drive Removal

1. Complete “Field Replacement Preparation” on page 5-3
2. Remove the three screws from the side cover. Retain the screws.
3. Slide the left side panel towards the back and lift the panel off.
4. Remove the three screws that secure the hard drive mounting cage. Keep the screws for reassembly.
5. From the front, swing the mounting cage outward on the three hinged teeth.
6. Carefully disconnect the data and power cables from the hard drive.

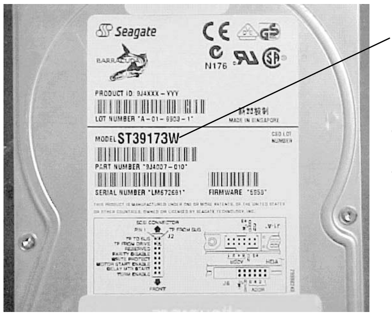

SCSI Cable without Terminator Block
SCSI Cable with Terminator Block

7. Remove the hard drive mounting cage assembly from the system.
8. Remove and retain the four screws securing the hard drive to the mounting cage. Remove the hard drive.

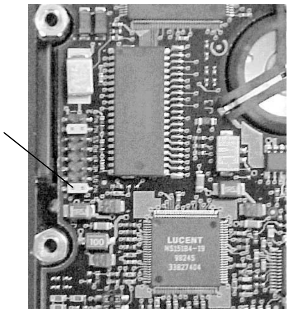
Hard Drive Installation

NOTE

Check the hard drive label. If the model number is ST39173W, remove the terminator jumper from connector J2.

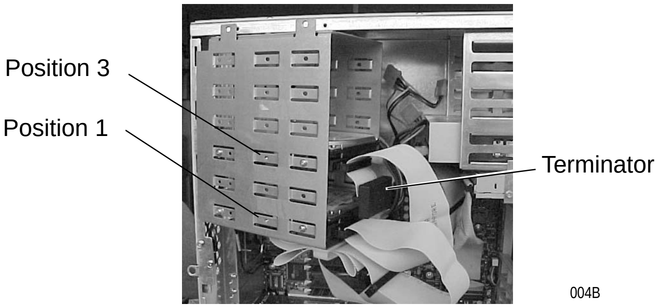

Seagate
MODEL ST39173W
Model Number

011B

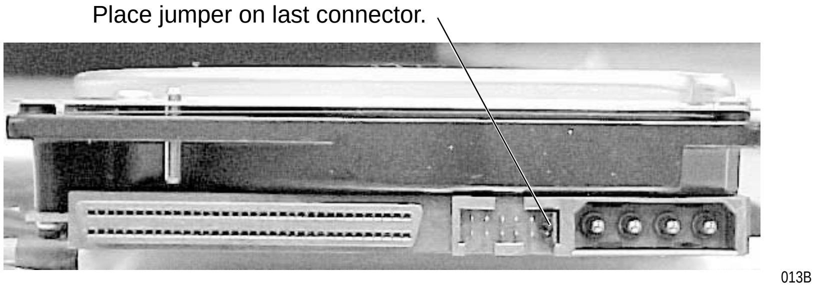

Remove Terminator Jumper
LUCENT

012B

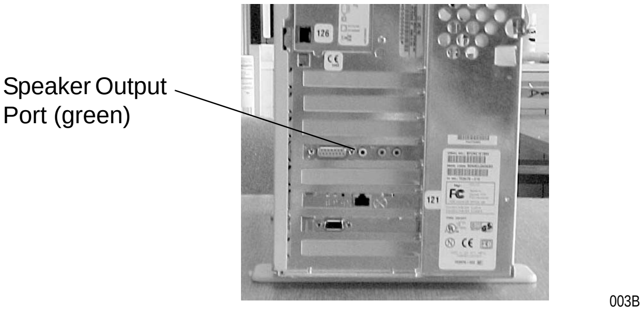
1. Install the new hard drive in position 1 of the hard drive mounting cage. Do not tighten the screws completely.


Position 3
Position 1
Terminator
004B

2. Verify full disclosure; verify SCSI ID 1.


Place jumper on last connector.
013B

3. Verify full disclosure, install full disclosure 18.6 drive is in position 3 of hard drive mounting cage.
4. Tighten the screws on the drives.
5. Install the hard drive mounting cage.
6. Install the hard drive power cables.
7. ***If there is a full disclosure drive,*** connect the last SCSI connector to the full disclosure drive. Otherwise, connect the last SCSI connector to the hard drive.
8. Install the side cover on the unit with the three screws.
9. Connect the keyboard, monitor, printer and mouse to the unit.
10. Connect the speakers to the green speaker output port.


Speaker Output Port (green)
003B

11. Connect the power cord to the AC source.
12. Do NOT connect the unit to the network.
13. Perform the “Electrical Safety Tests” on page 4-9.

Install Gold Drive Image

For instructions to load the Gold drive (ghost) image, refer to the CIC Pro Clinical Information Center and ApexPro Telemetry Software reload instructions (PN 2001099-195).

Configure Gold Drive to Product Drive (G2P)

For instructions to configure the CIC Pro Gold drive, refer to the CIC Pro Clinical Information Center and ApexPro Telemetry Software reload instructions (PN 2001099-195).

6

BCM Server Field Replacement Procedures

For your notes

CIC Pro Field Replacement Procedures

WARNING
FIRST complete "Field Replacement Preparation" on page 6-4 before performing any other procedure in this chapter. Failure to follow this instruction could result in death, serious injury, or product/property damage.

Field replacement information for the following CIC Pro components are included in this chapter:

- "Side Panel Removal/Installation" on page 6-5
- "Front Bezel Removal/Installation" on page 6-6
- "BCM Server Hard Drive Replacement" on page 6-7
- "Floppy Drive Removal/Installation" on page 6-14
- "CD Drive Removal/Installation" on page 6-17
- "Fan Removal/Installation" on page 6-23
- "Video Card Removal/Installation" on page 6-29
- "RX Network Card Removal/Replacement" on page 6-33
- "Audio Card Removal/Installation" on page 6-37
- "Watchdog Card Removal/Installation" on page 6-41
- "Motherboard Removal/Installation" on page 6-47
- "Power Supply Removal/Installation" on page 6-62
- "Power Switch Removal/Installation" on page 6-70

Field Replacement Preparation

Only a qualified service technician should perform the procedures in this chapter. Observe these safety guidelines before removing the system side cover to work inside the server.

1. Turn off all peripheral devices connected to the server.
2. Make sure the server is shut down, then unplug the AC power cord from the back of the server or from the wall outlet.

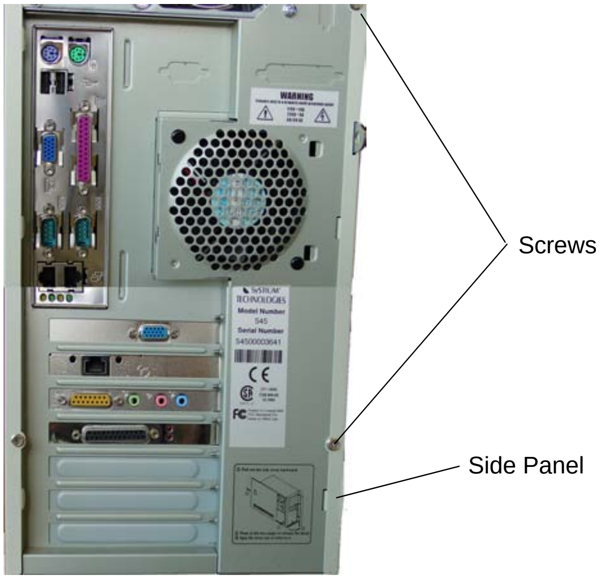
WARNING
The on/off button (a convex button) on the front panel does not turn off the system AC power. To remove power from the server, you must unplug the AC power cord from the wall outlet or power cord connector on the server.

3. Label and disconnect all peripheral cables and telecommunication lines connected to the I/O connectors or ports at back of the server.
4. Provide electrostatic discharge (ESD) protection by wearing an antistatic wrist strap attached to the chassis ground of the system (any unpainted metal surface) when handling components.

Side Panel Removal/Installation

Side Panel Removal

1. Complete the procedures in "Field Replacement Preparation" on page 6-4.
2. Remove and retain the two screws from the left side panel.



3. Slide the left side panel rearward until it clears the chassis lock tab on the back of the computer.
4. Tilt the top of the panel away from the chassis and lift to remove.

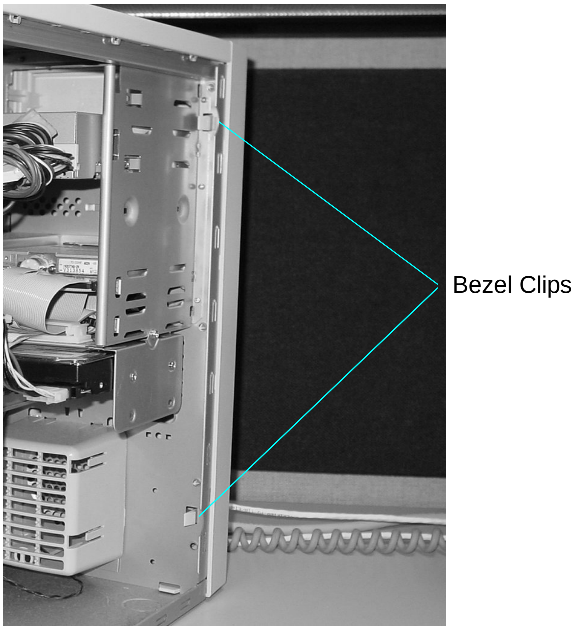
Side Panel Installation

1. Hook the channel at the bottom of the left side panel over the rail at the bottom of the computer chassis. The channel should be positioned at the back of the rail far enough to allow the lip at the back of the panel to clear the tab on the back of the computer.
2. Slide the panel forward so the chassis lock tab on the back panel fits into the slot in the lip at the back of the panel. Continue to slide the panel forward until the lip rests against the back of the computer.
3. Secure the left side panel with the two screws.

Front Bezel Removal/Installation

Front Bezel Removal

1. Push the left bezel clips toward the center of the chassis far enough for the clips to clear the holes. Rotate the bezel outward so the clips come out of the chassis.



2. Continue to rotate the bezel outward. When the right bezel clips disengage with a snap, the bezel can be removed.

Front Bezel Installation

1. Insert the four bezel clips into the holes the front of the chassis.
2. Apply pressure to the front of the bezel until the clips snap into place.

BCM Server Hard Drive Replacement

This procedure takes about one hour to complete.

Overview

1. If the HDD is still functioning, then "Record Configuration Information" on page 6-7.
2. "Hard Drive Removal/Installation" on page 6-11.
3. Upgrade with the appropriate software upgrade kit.
    - "Install Gold Drive Image" on page 5-10.
    - "Install Gold Drive Image" on page 5-10.
4. "Install Gold Drive Image" on page 6-13.
5. "Configure Gold Drive to Product Drive (G2P)" on page 6-13.

Record Configuration Information

NOTE
Alternately, for CIC Pro Version 4.0.x and later, the Webmin utility can be used instead of the information access procedures described in this section. Refer to Chapter 7, "Webmin Application" starting on page 7-1.

Before you replace the hard drive it is necessary to record certain configuration information to re-enter later in this procedure. Use the following procedure to record the information.

1. Use the mouse to select *Setup CIC* at the bottom of the screen.
2. From the *CIC Setup* screen, select the *Service Password* tab.
3. In the *Password* field type in the following text:

    mms_com <**Enter**>

The *GE Marquette Clinical Information Center* command window opens. The title bar of this window should be blue to indicate it is active. If not, place cursor inside this window and click to make it active.

> NOTE
> Software version "4.x" is used only as an example in the prompt and directory strings. The current software version found in the lower left hand corner of the *CIC Setup* screen should display in this string.
>
> The displayed prompt should be
> **"C:\Program Files\Marquette\CIC\4.x>"**

4. With the cursor at the end of the text string type **set** and press **Enter**. The "set command" information appears. (See following example pages.)
5. Record the *COMPUTERNAME*, *LANG*, *PCTYPE*, and *PRODID* (NT license number from certification) information for the CIC Pro you are upgrading.

6. Type **ipconfig<space>/all** and press **Enter**. The “ip config /all” information appears. (See following example pages.) Record the IP Address information for the CIC Pro you are upgrading.
7. Type **stop** then press **Enter** at the command prompt.
8. Open the *Start* menu and select *Shut Down*.
9. Select *Shut down the Computer?* and click *Yes*.
10. Wait for the message *It is now safe to turn off your computer*.
11. Press the on/off button to shut down the computer.

Set Command Example Page

```
Microsoft(R) Windows NT(TM)
(C) Copyright 1985-1996 Microsoft Corp.

C:\Program Files\Marquette\CIC\x.x>set
CIC_PATH=C:\Program Files\Marquette\CIC\2.0.17
COMPUTERNAME=cic000016230
ComSpec=C:\WINNT\system32\cmd.exe
DMI_SIA_PATH=C:\Program Files\Intel\ISC\CI
HOMEDRIVE=C:
HOMEPATH=\
ISCPATH=C:\Program Files\Intel\ISC
IXIPADDRESS=121.0.16.230
LANG=English
LOGONSERVER=\\cic000016230
MCIPADDRESS=126.1.205.17
NEWNAME=cic000016230
NUMBER_OF_PROCESSORS=2
OS=Windows_NT
Os2LibPath=C:\WINNT\system32\os2\dll;
Path=C:\Program Files\Marquette\CIC\2.1.1;C:\WINNT\SYSTEM32;C:\WINNT;C:\PROGRAM FILES\INTEL\ISC;C:\P
ROGRAM FILES\INTEL\ISC\MI;C:\PROGRAM FILES\INTEL\ISC\CI;C:\WINNT\SYSTEM32\DMI\BIN;C:\Program Files\M
arquette\US\bin;C:\flexlm\bin
PATHEXT=.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH
PCTYPE=Nightshade
PROCESSOR_ARCHITECTURE=x86
PROCESSOR_IDENTIFIER=x86 Family 6 Model 5 Stepping 2, GenuineIntel
PROCESSOR_LEVEL=6
PROCESSOR_REVISION=0502
PRODID=30097OEM002722122057
PROMPT=$P$G
SU_USERNAME=administrator
SystemDrive=C:
SystemRoot=C:\WINNT
TEMP=C:\TEMP
TMP=C:\TEMP
UNIONSTATION=C:\Program Files\Marquette\US
USBIN=C:\Program Files\Marquette\US\bin
USCFG=C:\Program Files\Marquette\US\cfg
USERDOMAIN=cic000016230
USERNAME=CIC
USERPROFILE=C:\WINNT\Profiles\cic
USLOG=C:\Program Files\Marquette\US\log
WIN32DMIPATH=C:\WINNT\System32\DMI
windir=C:\WINNT

C:\Program Files\Marquette\CIC\2.1.1>
```

Computer Name ______________________________

Language ___________________________________

PC Type ____________________________________

Product ID __________________________________

BCM Server IP Config /All Example Page

```
C:\Program Files\Marquette\CIC\x.x>ipconfig /all

Windows NT IP Configuration

        Host Name . . . . . . . . . : BCM_CIC_1
        DNS Servers . . . . . . . . :
        Node Type . . . . . . . . . : Broadcast
        NetBIOS Scope ID. . . . . . :
        IP Routing Enabled. . . . . : No
        WINS Proxy Enabled. . . . . : No
        NetBIOS Resolution Uses DNS : No

Ethernet adapter E100B4:

        Description . . . . . . . . : Intel(R) PRO Adapter
        Physical Address. . . . . . : 00-10-F3-03-02-7F
        DHCP Enabled. . . . . . . . : No
         IP Address. . . . . . . . . : 121.64.68.1 (IX)
        Subnet Mask . . . . . . . . : 255.0.0.0
         Default Gateway . . . . . . :

Ethernet adapter E100B3:

        Description . . . . . . . . : Intel(R) PRO Adapter
        Physical Address. . . . . . : 00-10-F3-03-02-80
        DHCP Enabled. . . . . . . . : No
        IP Address. . . . . . . . . : 126.64.68.2 (ApexPro Host)
        Subnet Mask . . . . . . . . : 255.0.0.0
        IP Address. . . . . . . . . : 126.64.68.1 (MC)
        Subnet Mask . . . . . . . . : 255.0.0.0
        Default Gateway . . . . . . :

Ethernet adapter E100B2:

        Description . . . . . . . . : Intel(R) PRO Adapter
        Physical Address. . . . . . : 00-50-DA-15-75-3D
        DHCP Enabled. . . . . . . . : No
        IP Address. . . . . . . . . : 119.1.1.2 (RX)
        Subnet Mask . . . . . . . . : 255.0.0.0
        Default Gateway . . . . . . :

C:\Program Files\Marquette\CIC\2.1.1>exit
```

MC IP Address ______________________________

IX IP Address ______________________________

IX IP Subnet Mask Address_____________________

RX IP Address ______________________________

ApexPro Host IP Address ______________________

NOTE: This information is also recorded on labels on the top front of the CIC tower.

Hard Drive Removal/Installation

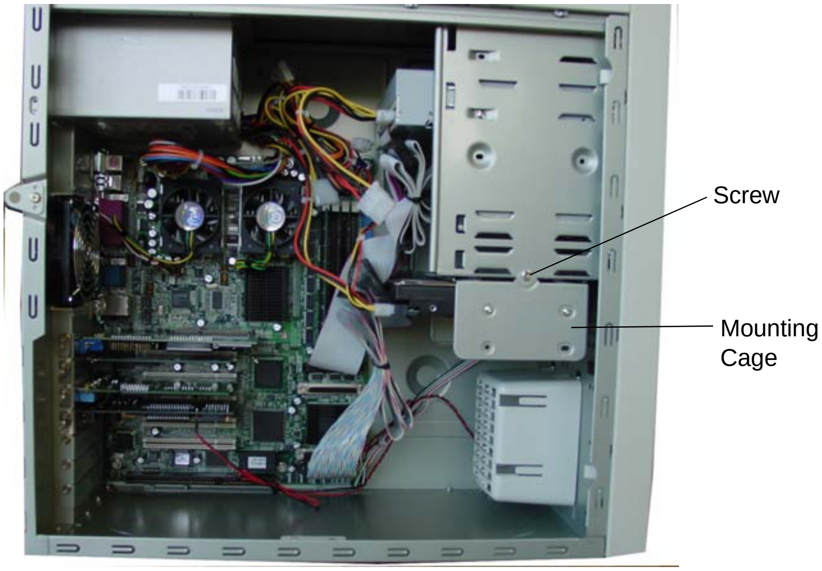
Hard Drive FRU Kit No. 2017715-002

Configuration Information

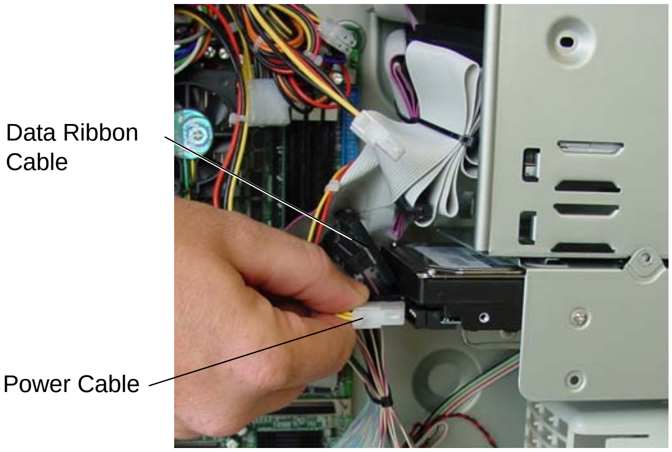
If you have not already done so, complete "Record Configuration Information" on page 6-7 before continuing with this procedure.

Hard Drive Removal

1. Complete "Field Replacement Preparation" on page 6-4.
2. Complete "Side Panel Removal" on page 6-5.
3. Remove and retain screw securing the hard drive mounting cage to the CPU.

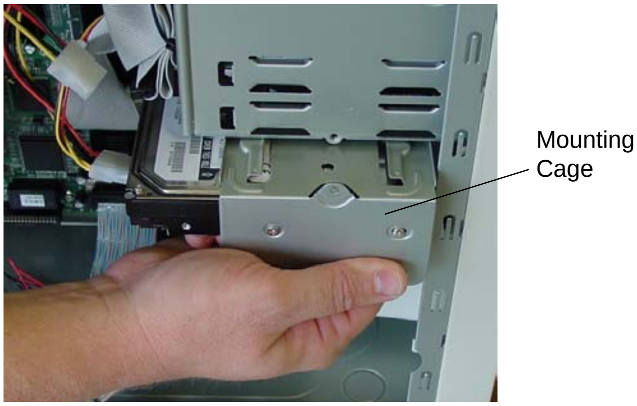


4. Slide the mounting cage outward only enough to access the power cable and data ribbon cable connections.

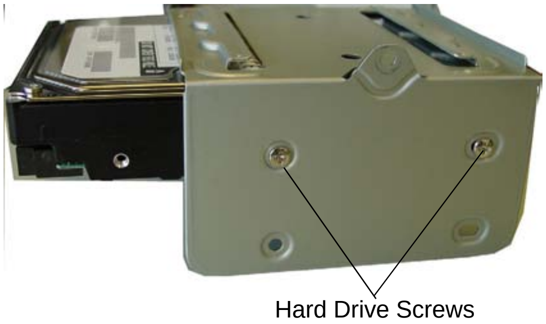


5. Carefully disconnect the power cable from the hard drive.

6. Carefully disconnect the data ribbon cable from the hard drive.



7. Remove the hard drive mounting cage assembly from the unit.



8. Remove and retain two hard drive screws from each side of mounting cage. Remove the hard drive.

Hard Drive Installation

1. Install the new hard drive to the mounting cage with original four screws.
2. Slide the hard drive mounting cage assembly back into the unit. Ensure there are no wires pinched when sliding the cage assembly into place.
3. Carefully connect the data and power cables to the hard drive. Alternately, replace the old data cable with the new cable included with the new hard drive.
4. Slide the mounting cage all the way into the slot. Secure cage to CPU with original mounting screw.
5. Install side panel and secure with original two screws.
6. Connect the keyboard, monitor, printer and mouse to the unit.
7. Connect the speakers to the green speaker output port.
8. Connect the power cord to the AC power source.

9. Do not connect the unit to the network.
10. "Side Panel Installation" on page 6-5

Install Gold Drive Image

For instructions to load the Gold drive (ghost) image, refer to the CIC Pro Clinical Information Center and ApexPro Telemetry Software reload instructions (PN 2001099-195).

Configure Gold Drive to Product Drive (G2P)

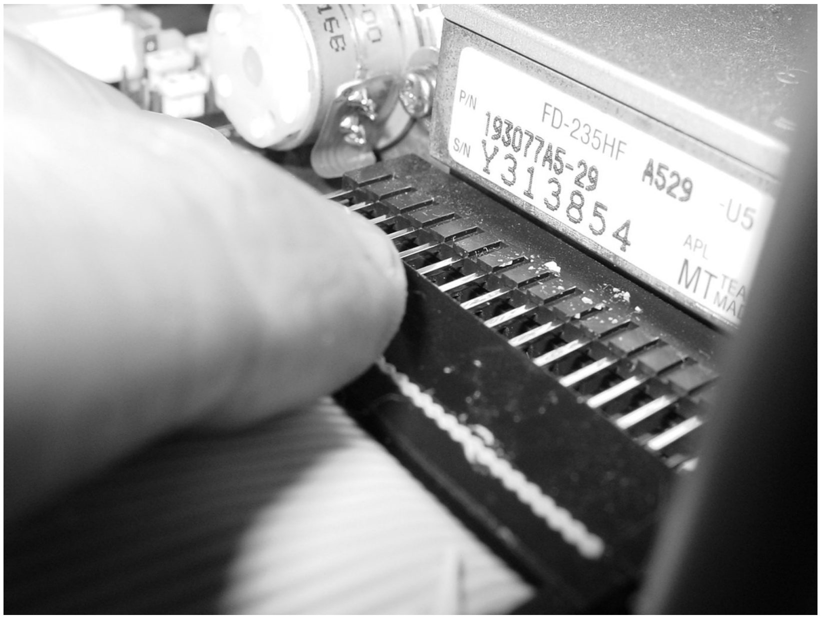
For instructions to configure the CIC Pro Gold drive, refer to the CIC Pro Clinical Information Center and ApexPro Telemetry Software reload instructions (PN 2001099-195).

Floppy Drive Removal/Installation

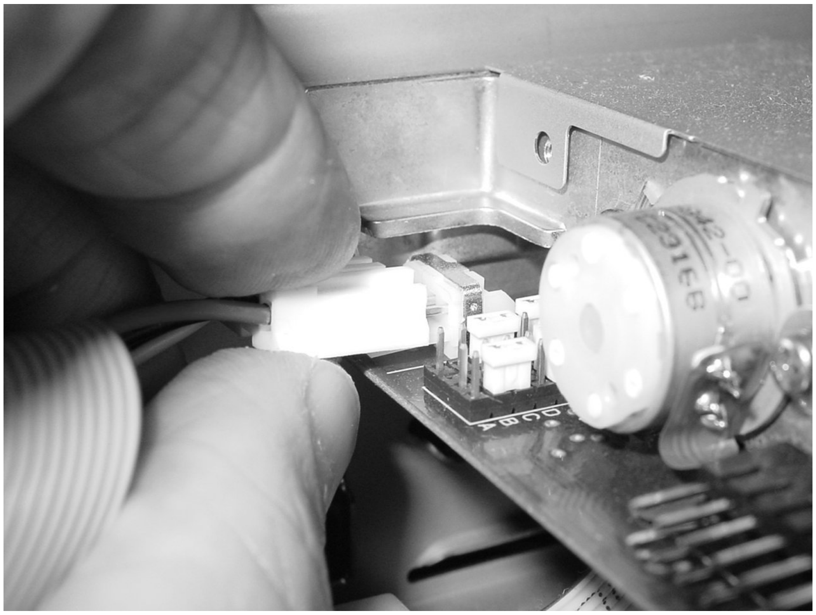
Floppy Drive FRU Kit No. 2017715-003

Floppy Drive Removal

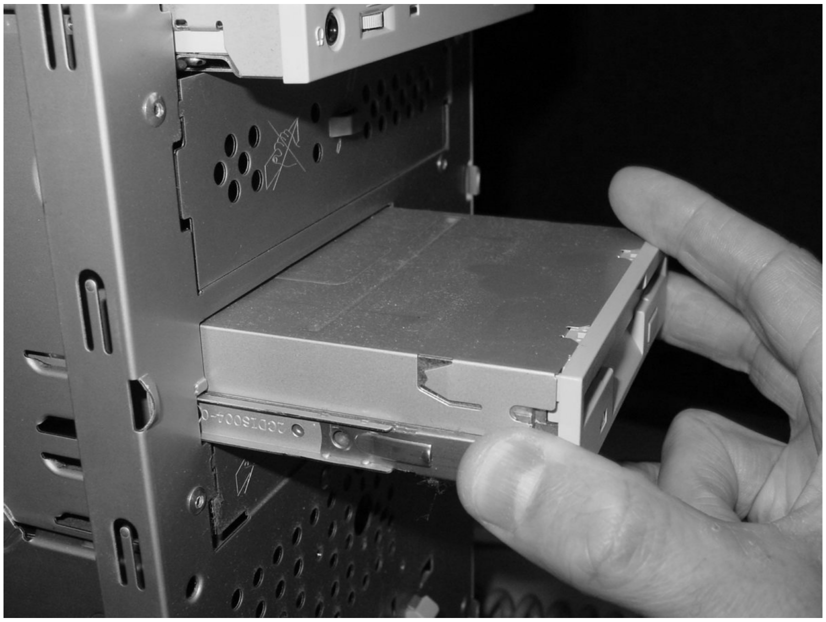
1. Complete "Field Replacement Preparation" on page 6-4.
2. Complete "Side Panel Removal" on page 6-5.
3. Complete "Front Bezel Removal" on page 6-6.
4. Carefully disconnect the data ribbon cable from the back of the floppy drive.



5. Carefully disconnect the power cable from the back of the floppy drive.



6. Squeeze the locking tabs on the front sides of the floppy drive and pull the floppy drive out of the front of the chassis.

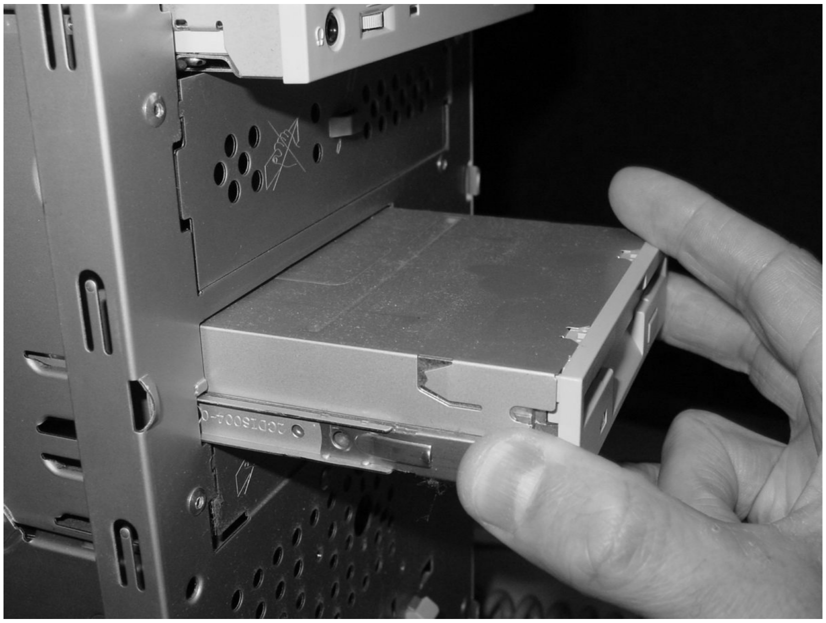


7. If you are replacing the floppy drive, remove the slide rails, and the screws securing the slide rails, from the sides of the floppy drive case to use with the new floppy drive.

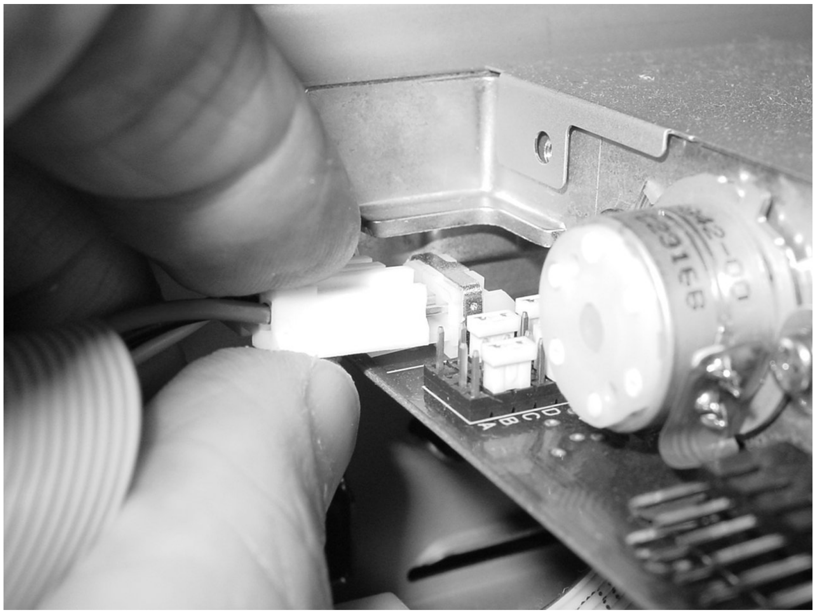
Floppy Drive Installation

1. If you are replacing the floppy drive, secure the slide rails and screws removed in step 7 during "Floppy Drive Removal" to the sides of the replacement floppy drive.
2. Align the rails on the sides of the floppy drive with the guides in the floppy drive bay in the front of the chassis.

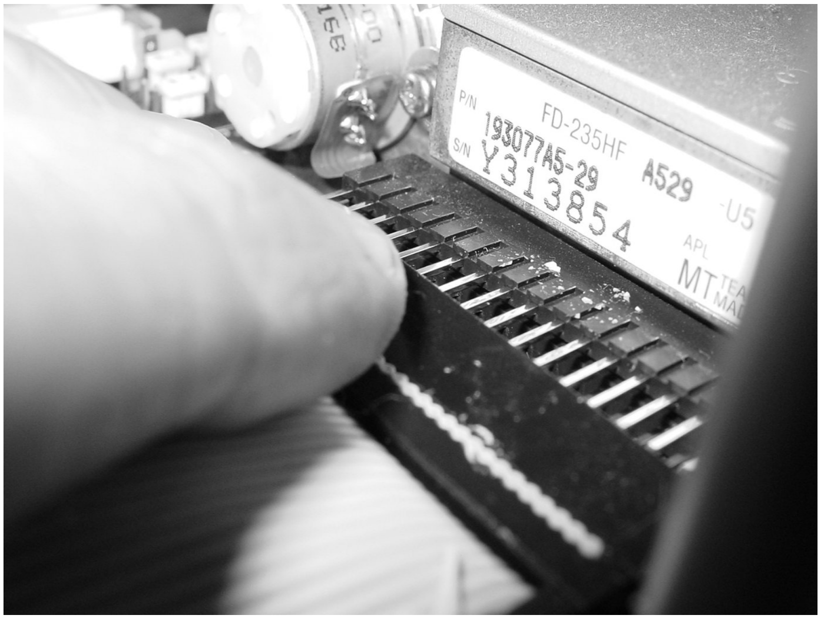
3. Slide the floppy drive into the chassis until the locking tabs on the sides of the floppy drive snap into place.



4. Carefully connect the power cable to the back of the floppy drive.



5. Position the red stripe on the data ribbon cable with the red stripe toward the floppy power connector, and carefully connect the data ribbon cable to the back of the floppy drive.



6. Complete “Front Bezel Installation” on page 6-6.
7. Complete “Side Panel Installation” on page 6-5.
8. If applicable, perform the “Electrical Safety Tests” on page 4-9.

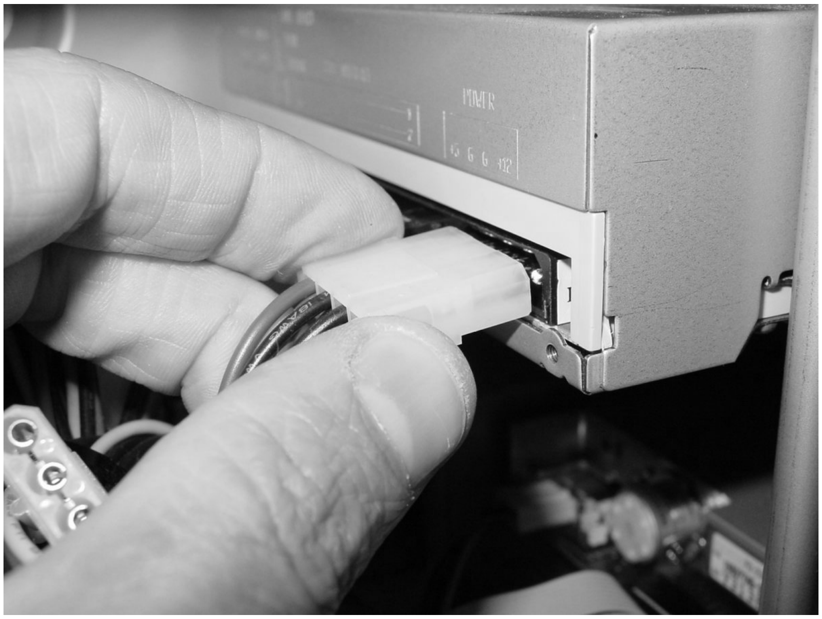
CD Drive Removal/Installation

CD Drive FRU Kit No. 2017715-004

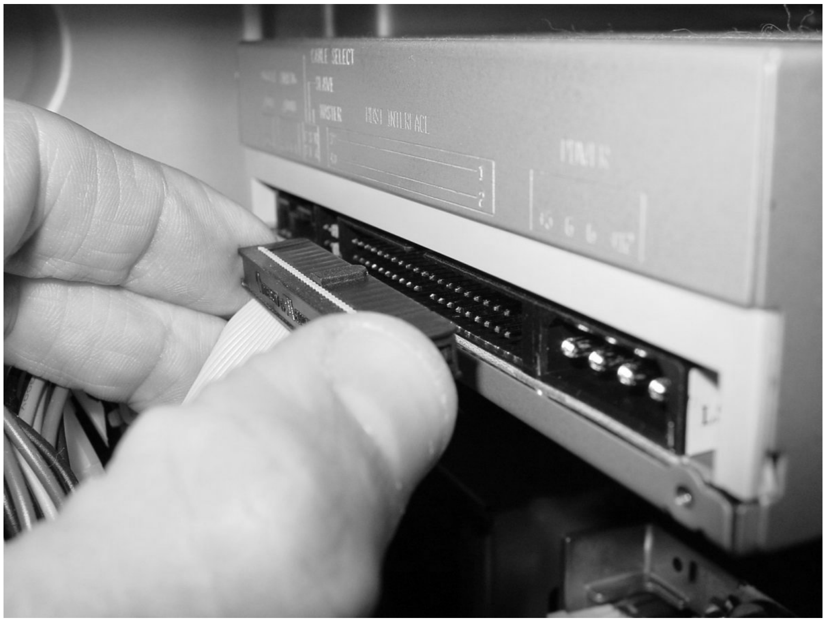
CD Drive Removal

1. Complete “Field Replacement Preparation” on page 6-4.
2. Complete “Side Panel Removal” on page 6-5.
3. Complete “Front Bezel Removal” on page 6-6.

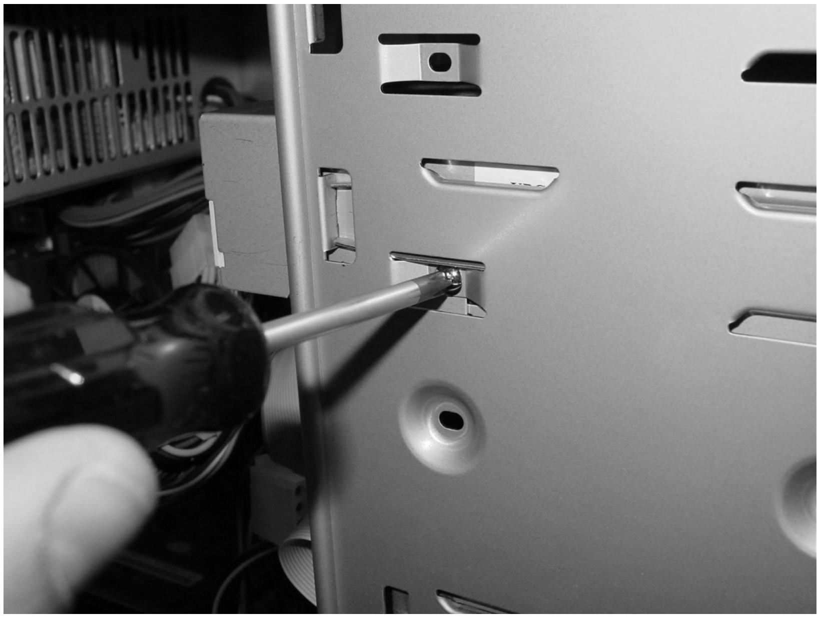
4. Carefully disconnect the power cable from the back of the CD drive.



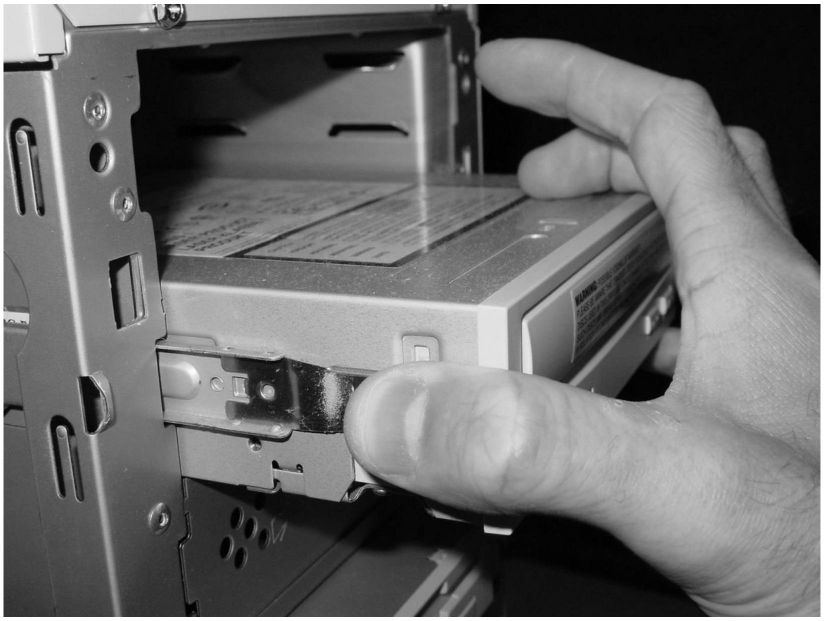
5. Carefully disconnect the data ribbon cable from the back of the CD drive.



6. Remove the anchor screw securing the side of the CD drive to the chassis.

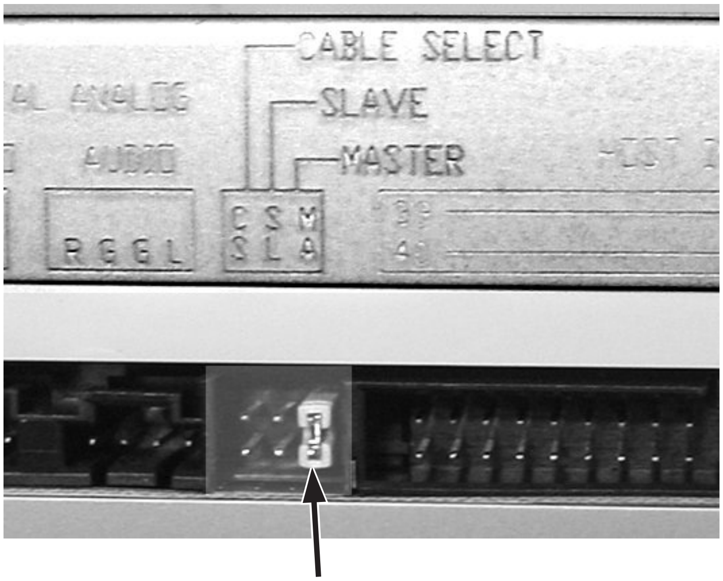


7. Squeeze the locking tabs on the front sides of the CD drive and pull the CD drive out the front of the chassis.

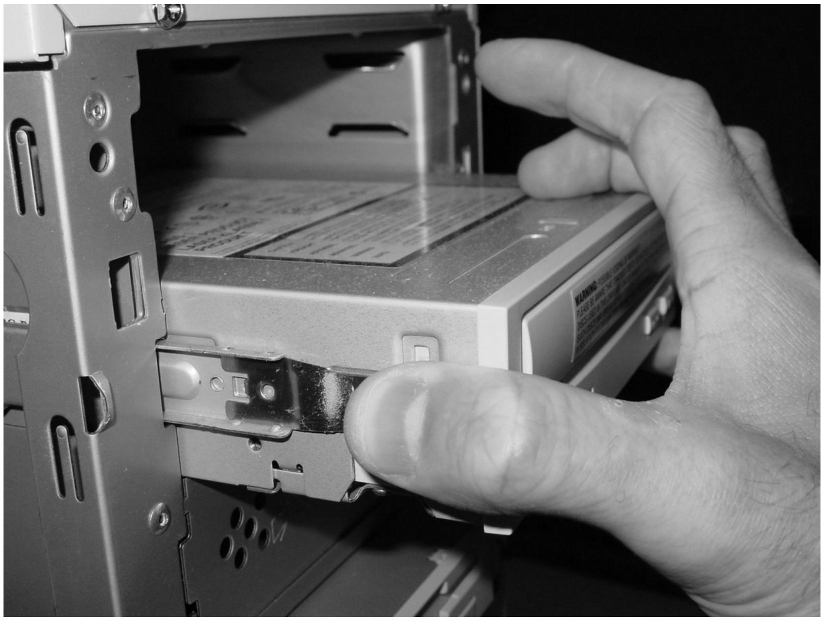


CD Drive Installation

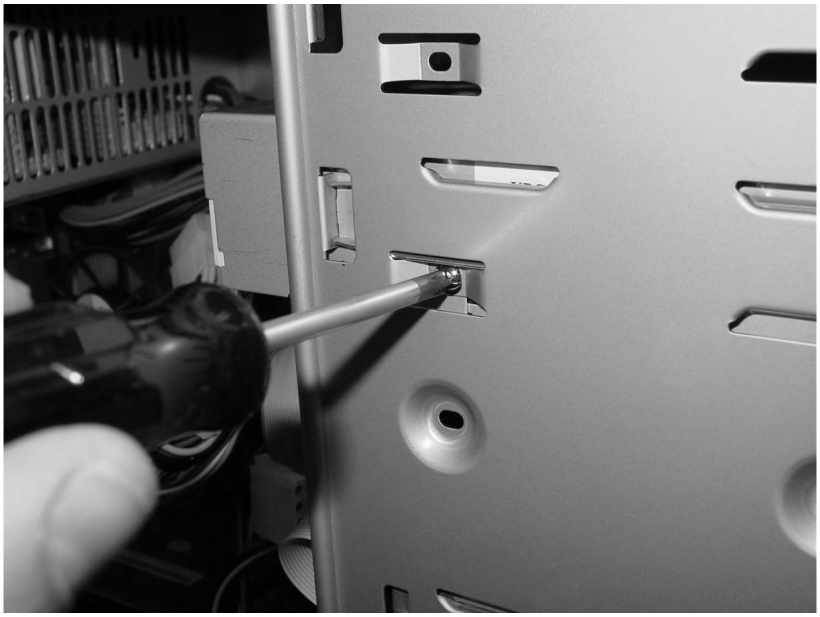
1. Ensure the jumper on the back of the CD drive is set to the “MASTER” configuration.


CABLE SELECT
SLAVE
MASTER
ANALOG
AUDIO
R G G L
C S M
S L A

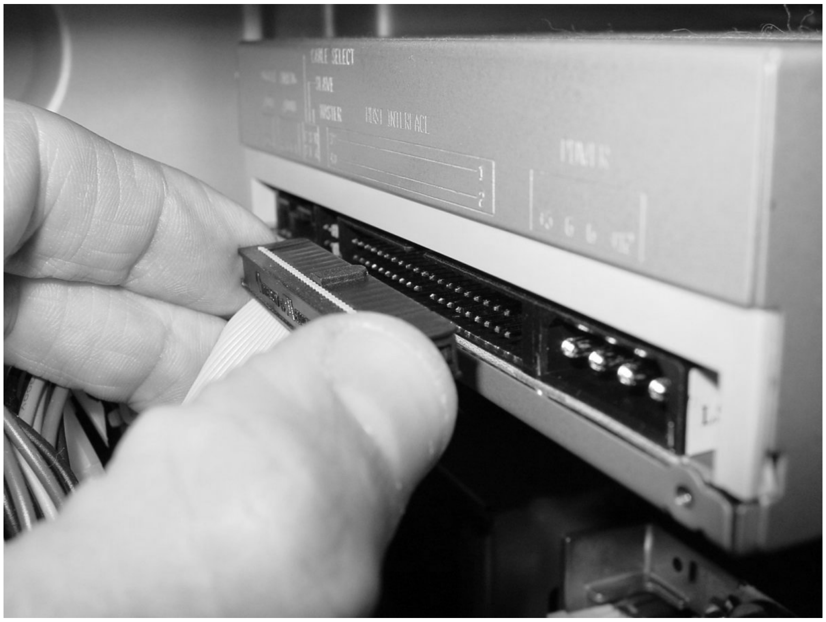
2. Align the rails on the sides of the CD drive with the guides in the CD drive bay in the front of the chassis.
3. Slide the CD drive into the chassis until the locking tabs on the sides of the CD drive snap into place.



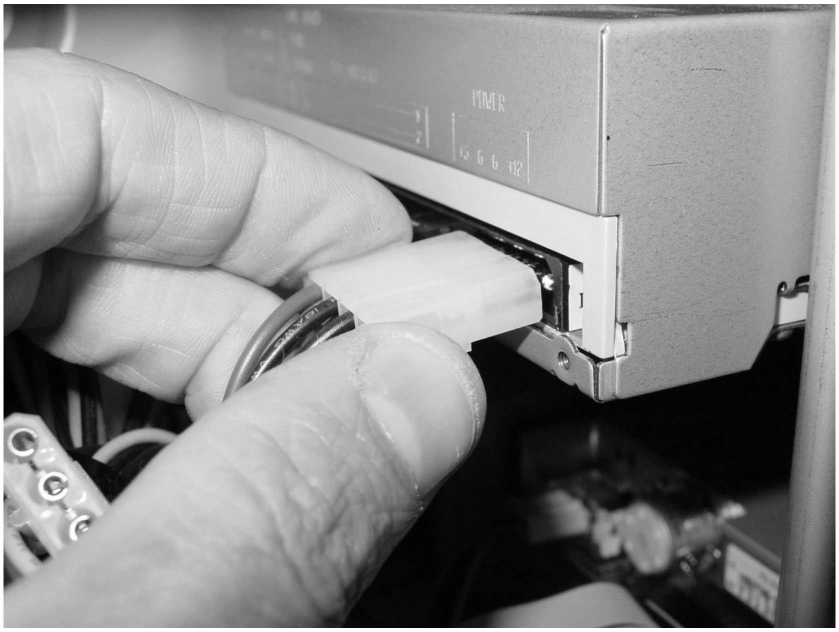
4. Insert and tighten the anchor screw to secure the CD drive to the chassis.



5. Carefully connect the data ribbon to the back of the CD drive.



6. Carefully connect the power cable to the back of the CD drive.



7. Complete “Front Bezel Installation” on page 6-6.
8. Complete “Side Panel Installation” on page 6-5.
9. If applicable, perform the “Electrical Safety Tests” on page 4-9.

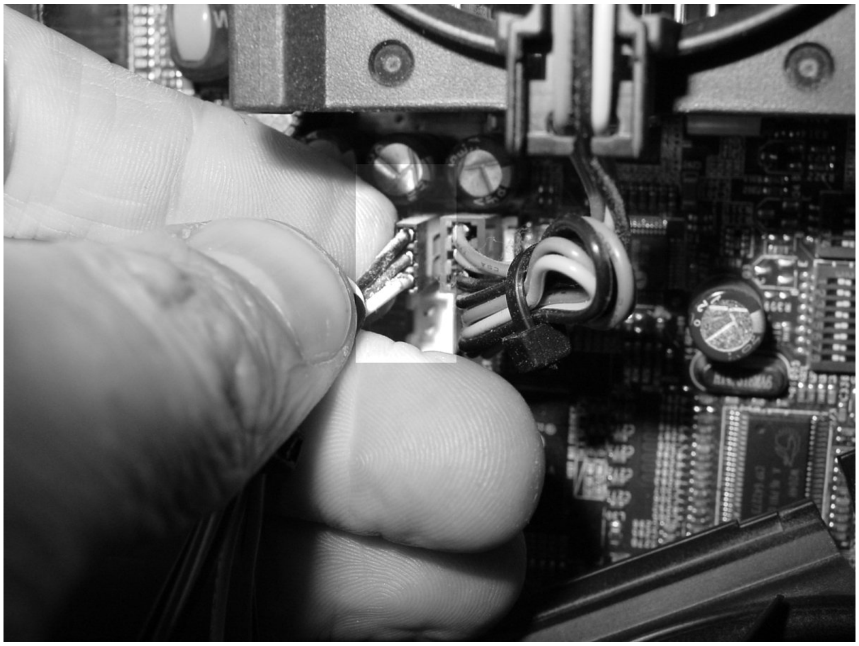
Fan Removal/Installation

CPU Fan FRU Kit No. 2017715-009

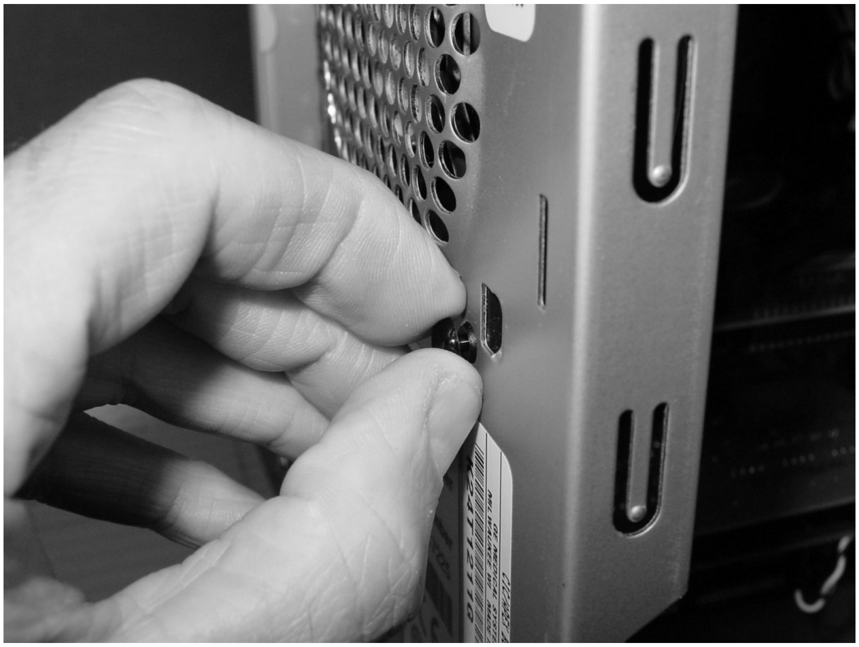
Chassis Fan FRU Kit No. 2017715-013

Chassis Fan Removal

1. Complete “Field Replacement Preparation” on page 6-4.
2. Complete “Side Panel Removal” on page 6-5.
3. Disconnect the chassis fan power connector from the motherboard.



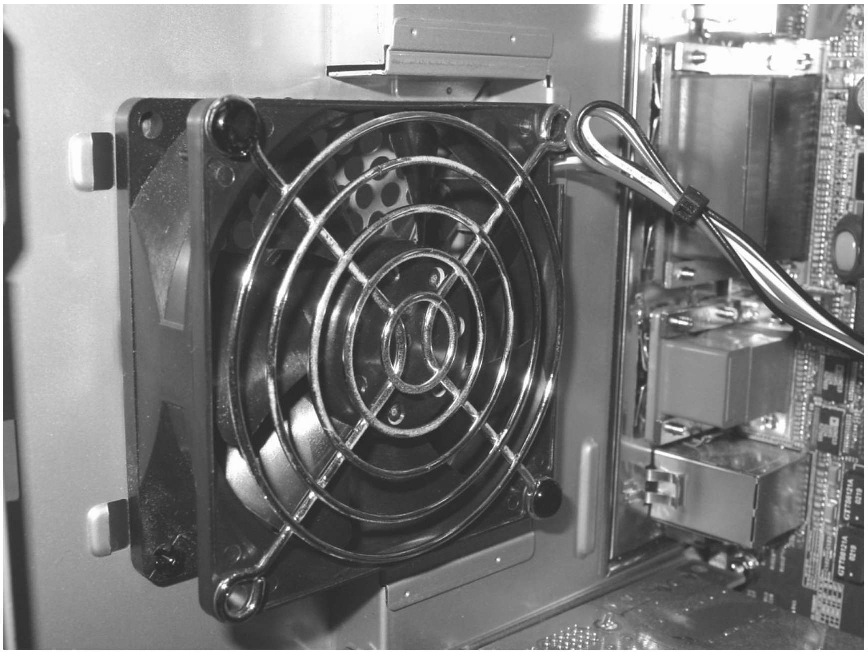
4. Remove the retainers securing the chassis fan to the chassis. Remove the fan.



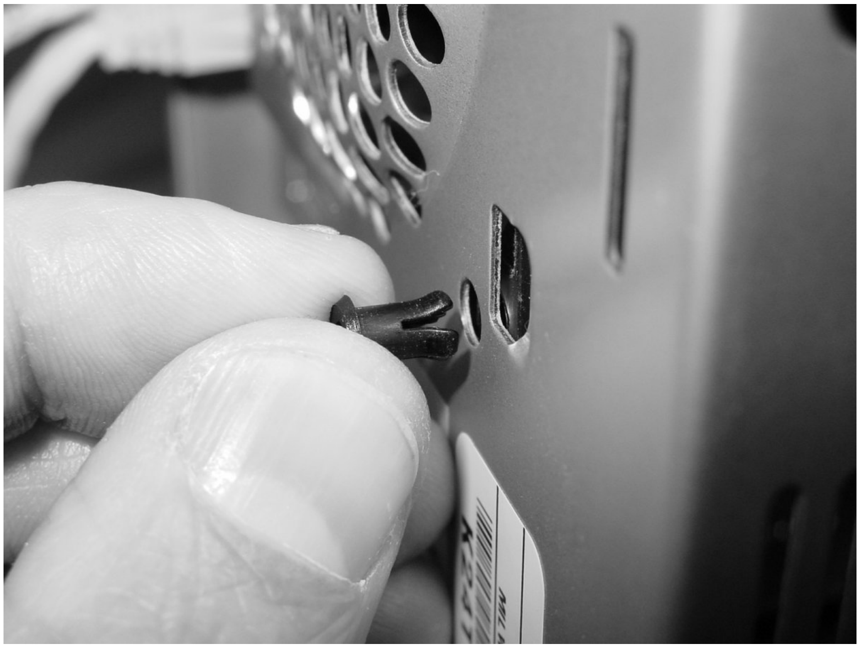
Chassis Fan Installation

1. Position the chassis fan, with the power leads toward the motherboard, against the inside back panel of the chassis, over the ventilation perforations. Ensure the

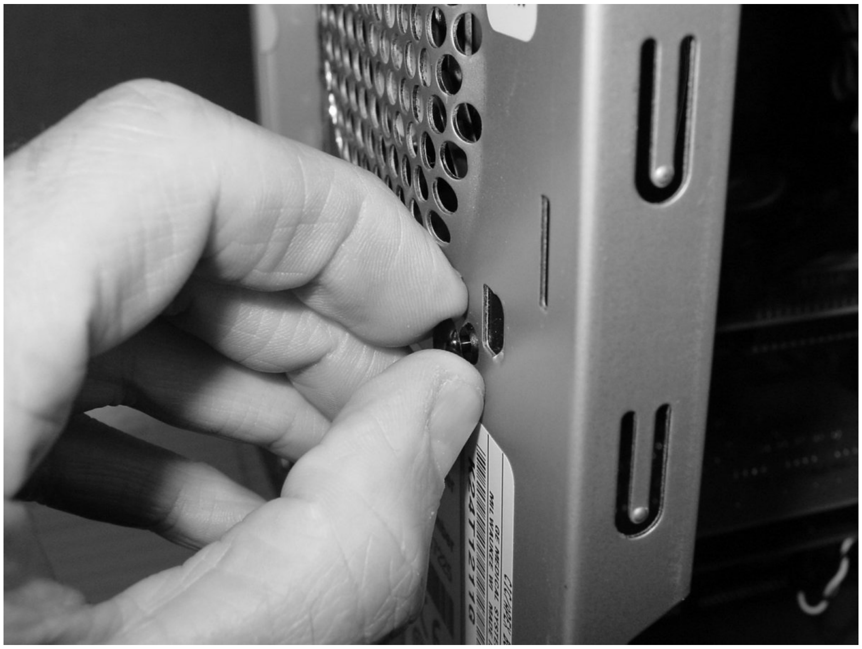
leads for the power supply fits into the notch in the fan shroud, and are not pinched between the fan shroud and the chassis.



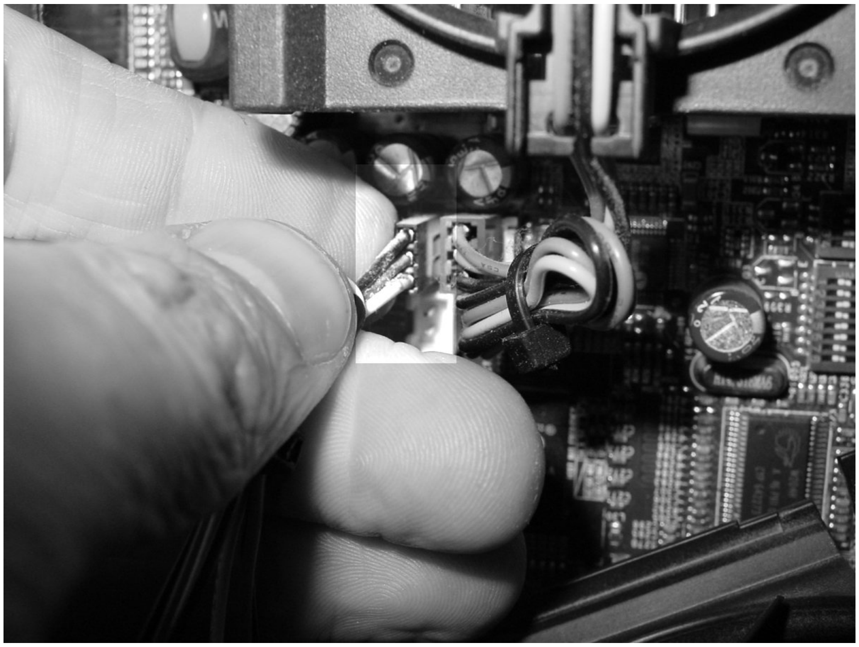
2. Secure the fan by pushing the retainer sleeves through the back of the chassis and into the corners of the fan.



3. Lock the fan in place by pushing the retainer pins into the retainer sleeves.



4. Connect the chassis fan power connector to the motherboard, with the black lead on top. Tie excess wire as necessary.



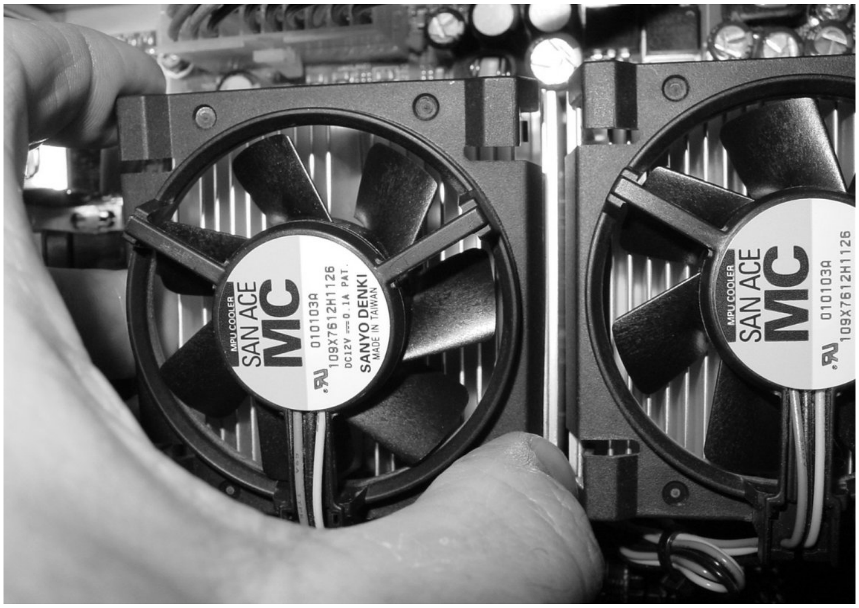
5. If you have no other components to remove/install, complete “Side Panel Installation” on page 6-5.
6. If applicable, perform the “Electrical Safety Tests” on page 4-9.

CPU Fan Removal

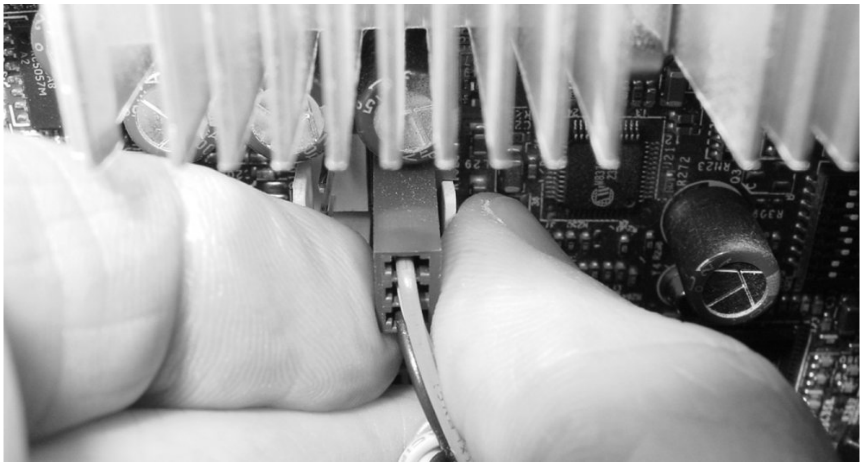
NOTE

The computer may include two CPU fans. Repeat this procedure, if necessary, to remove both fans.

1. Complete "Field Replacement Preparation" on page 6-4.
2. Complete "Side Panel Removal" on page 6-5
3. Using your fingers or a flat blade screwdriver, carefully pry the clips at the corners of the fan inward until they spring free from the CPU cooling fins



4. Disconnect the fan power connector from the motherboard. Remove the fan.

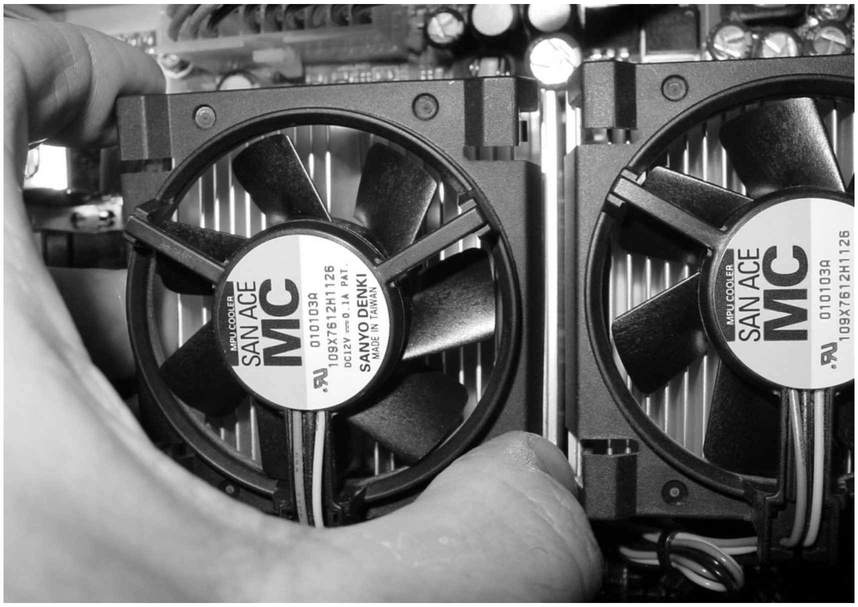


CPU Fan Installation

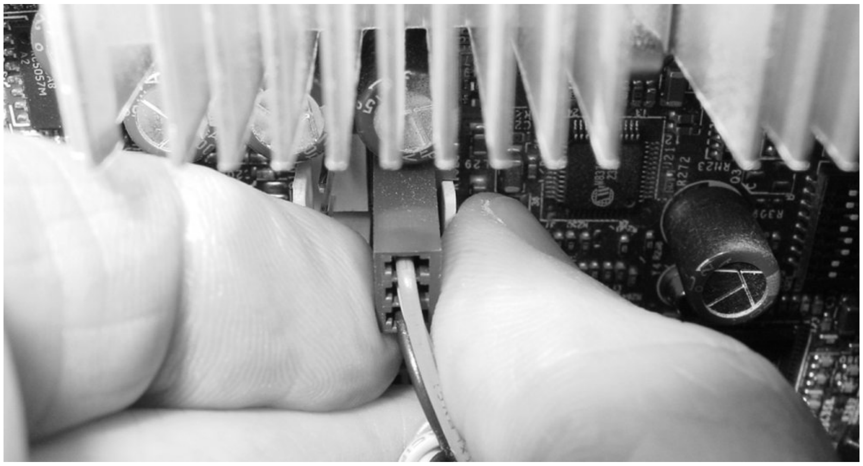
NOTE

The computer may include two CPU fans. Repeat this procedure, if necessary, to install both fans.

1. Snap the fan in place on the cooling fins, as shown.


MPU COOLER
SAN ACE
MC
010103A
109X7612H1126
DC12V 0.1A PAT.
SANYO DENKI
MADE IN TAIWAN

2. Connect the fan power connector to the motherboard. Tie excess wire as necessary.



3. If you have no other components to remove/install, complete “Side Panel Installation” on page 6-5.
4. If applicable, perform the “Electrical Safety Tests” on page 4-9.

Video Card Removal/Installation

Video Card FRU Kit No. 2017715-006

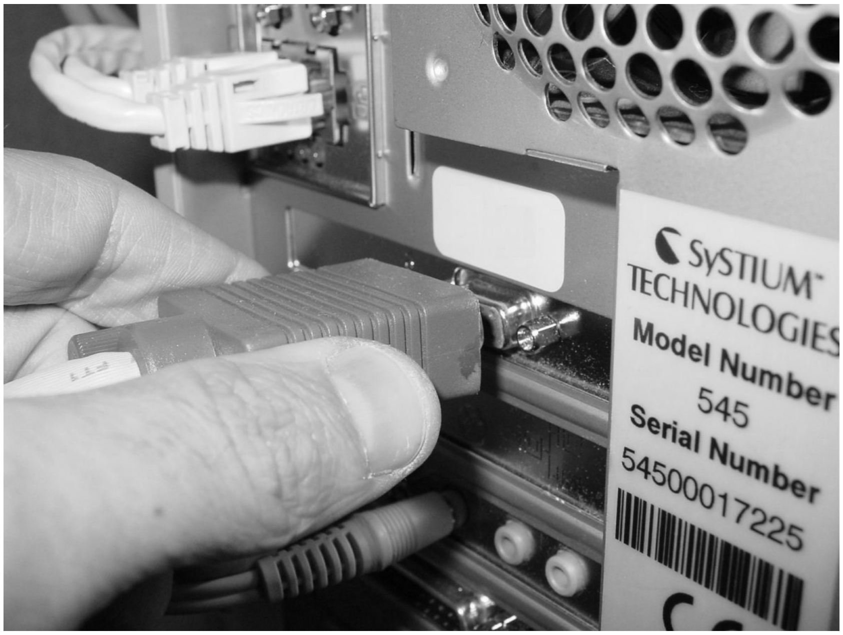
Dual Video Card FRU Kit No. 2017715-016

NOTE

This procedure applies only to servers shipped with CIC Pro Version 4.0.x and later.

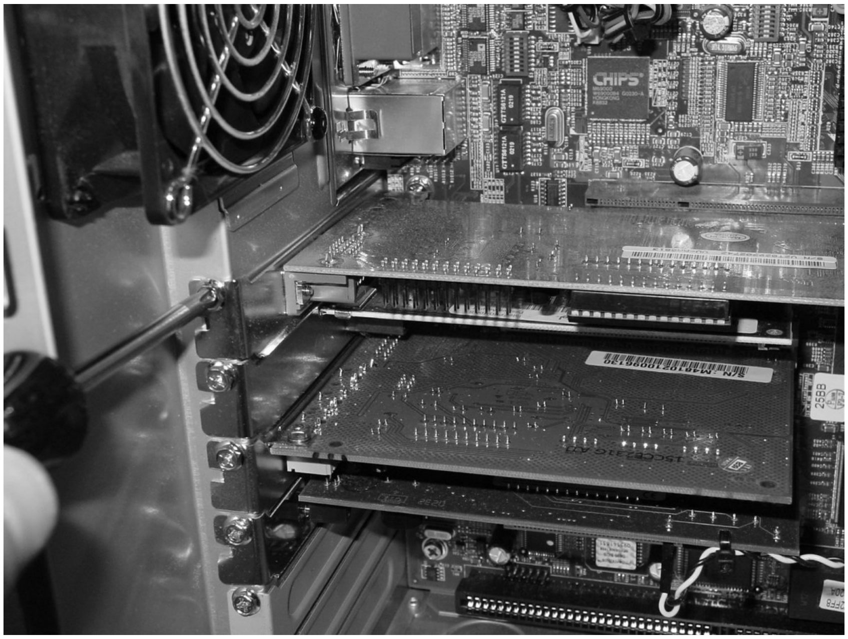
Video Card Removal

1. Complete “Field Replacement Preparation” on page 6-4.
2. Loosen the thumbscrews securing the video display monitor cable to the video connection jack. Remove the cable from the jack.

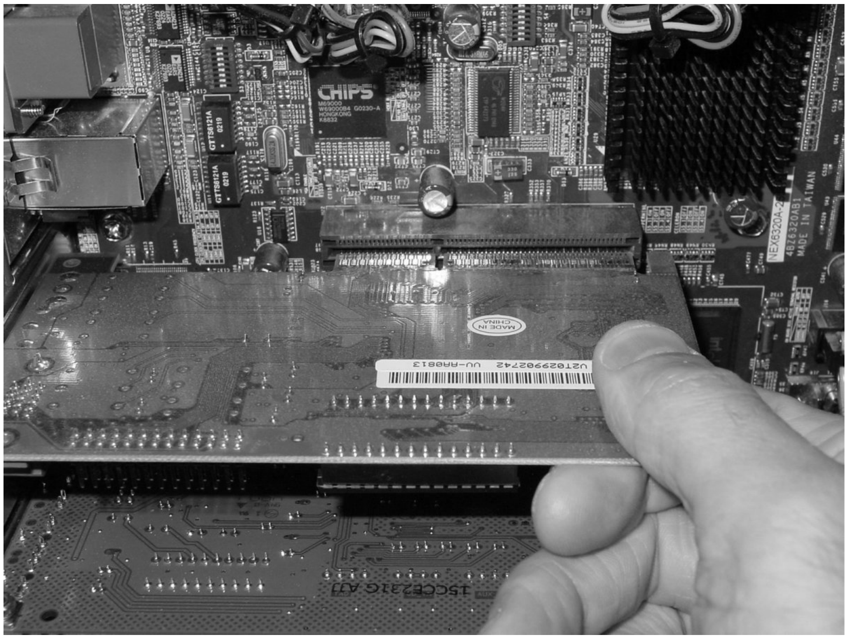

SYSTIUM TECHNOLOGIES
Model Number
545
Serial Number
54500017225

3. If necessary, complete “Side Panel Removal” on page 6-5.

4. Loosen and remove the screw securing the video card to the chassis.

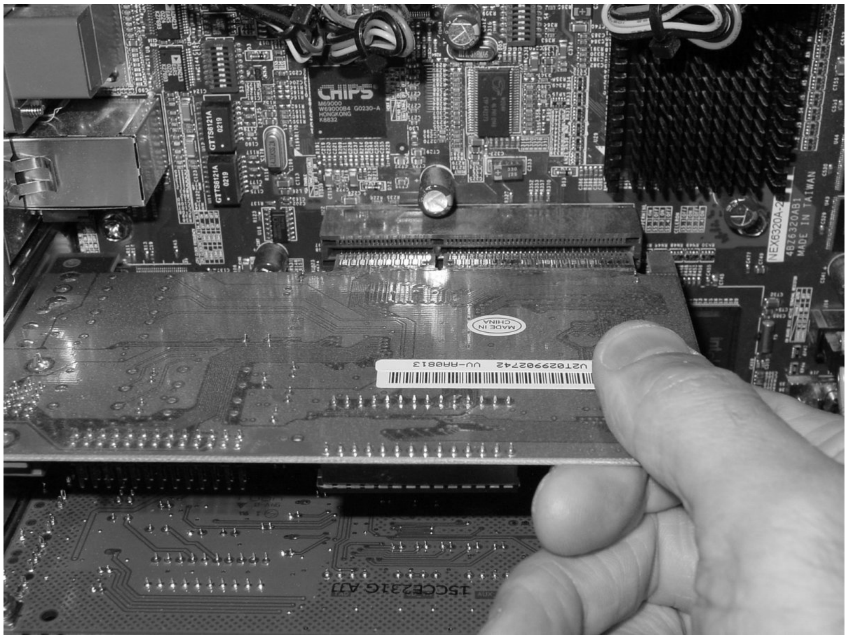


5. Carefully remove the video card from the slot.

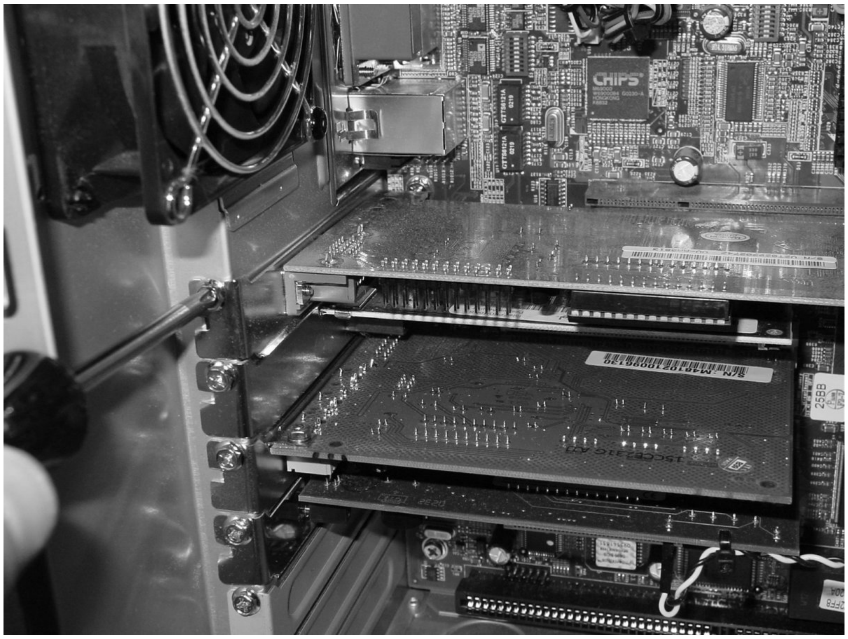


Video Card Installation

1. Carefully insert the connection tabs on the audio card into the slot as shown. Ensure the card is completely seated into the slot.

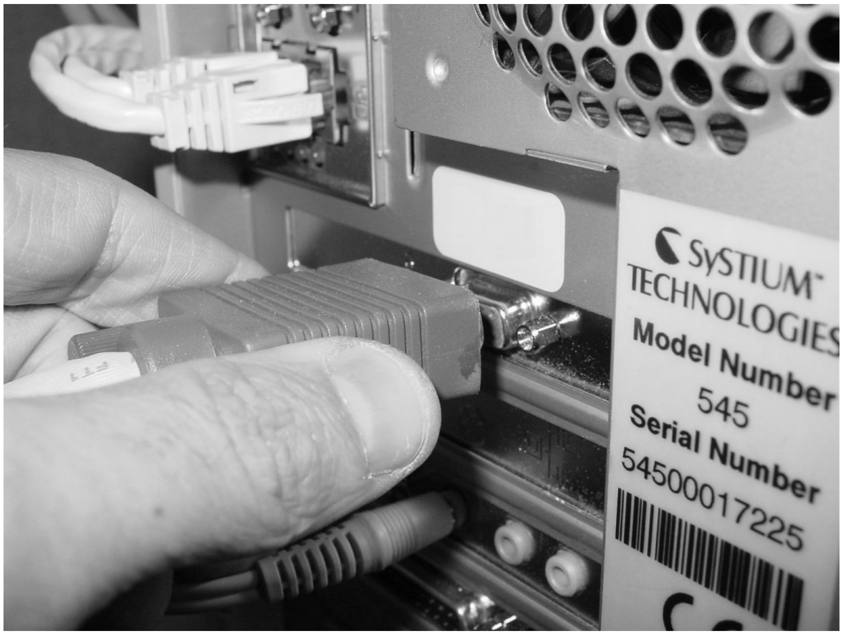


2. Secure the card into the chassis with the screw, as shown. Ensure the card is still completely seated into the slot.



3. If you have no other components to remove/install, complete “Side Panel Installation” on page 6-5.

4. Connect the video display monitor cable to the video connection on the video card. Secure the video display monitor cable with thumbscrews on the connector.


SySTIUM
TECHNOLOGIES
Model Number
545
Serial Number
54500017225

5. If applicable, perform the “Electrical Safety Tests” on page 4-9.

RX Network Card Removal/Replacement

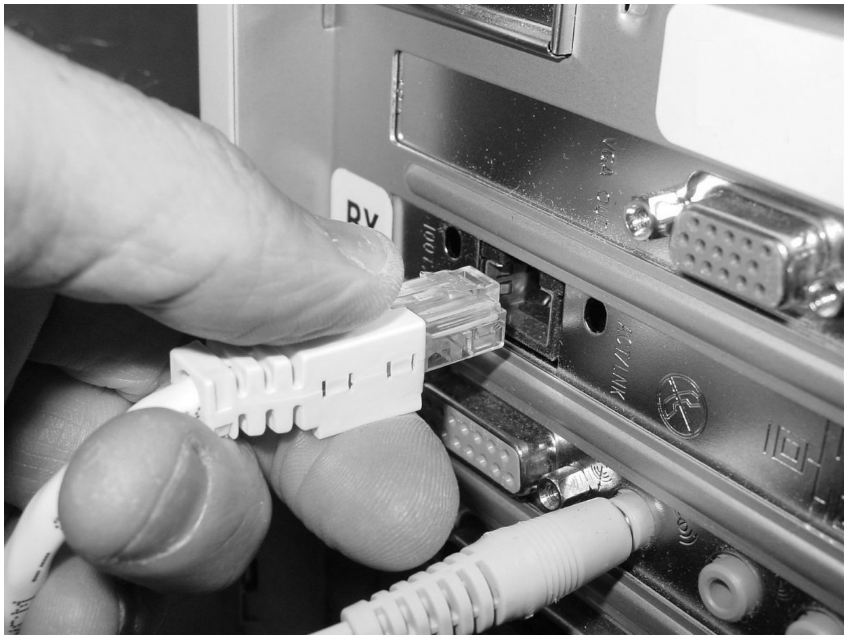
RX Network Card FRU Kit No. 2017715-008

NOTE

This procedure applies only to servers shipped with CIC Pro Version 4.0.x and later.

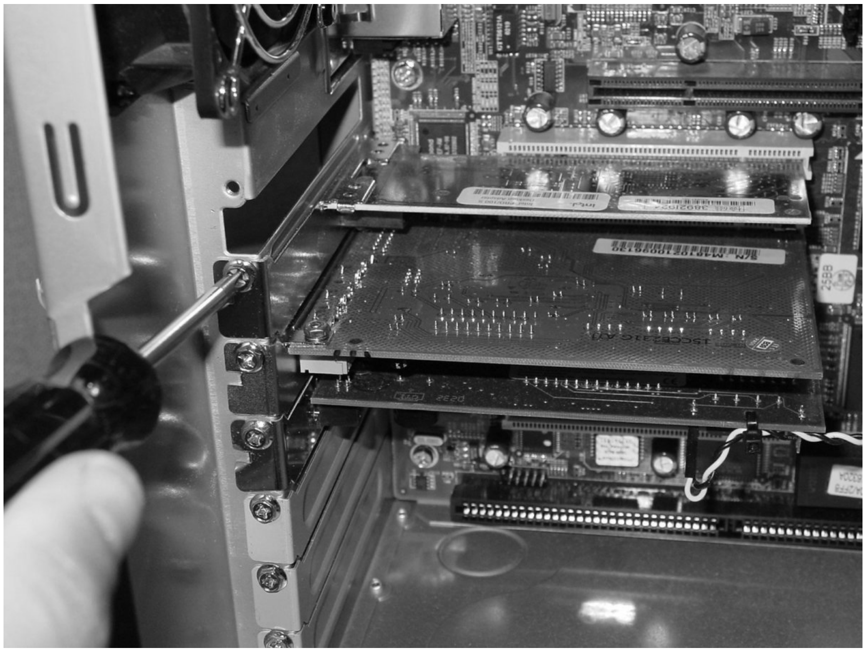
RX Network Card Removal

1. Complete “Field Replacement Preparation” on page 6-4.
2. Squeeze the tab securing the RX network cable connector, and remove the cable from the jack.



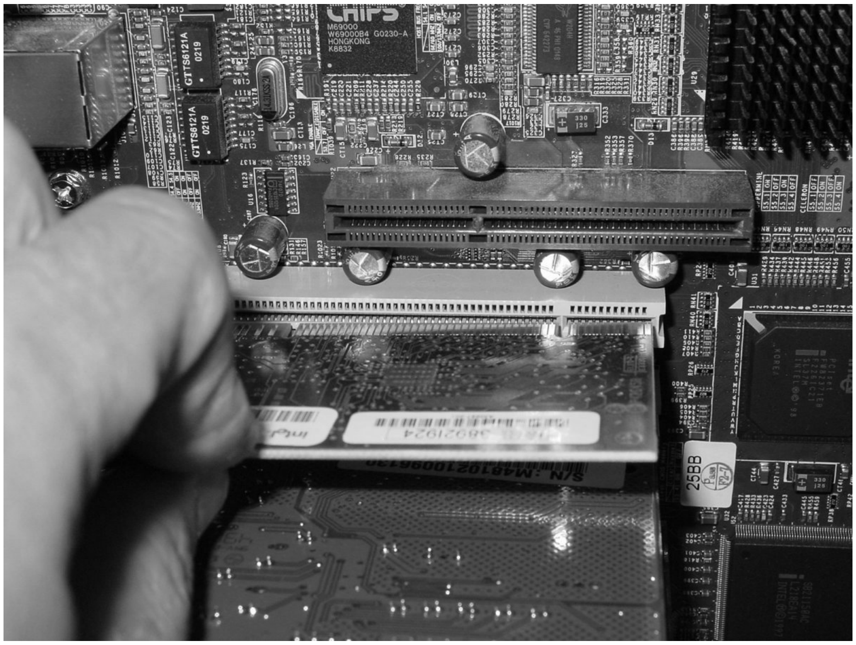
3. If necessary, complete “Side Panel Removal” on page 6-5.

4. Loosen and remove the screw securing the RX network card to the chassis.



VIDEO CARD REMOVED FOR CLARITY

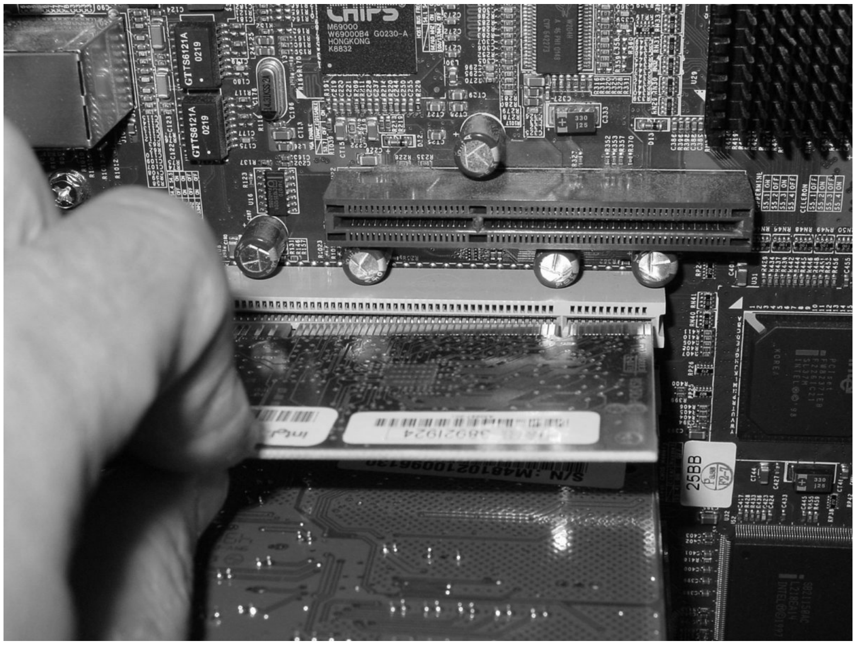
5. Carefully remove the RX network card from the slot.



VIDEO CARD REMOVED FOR CLARITY

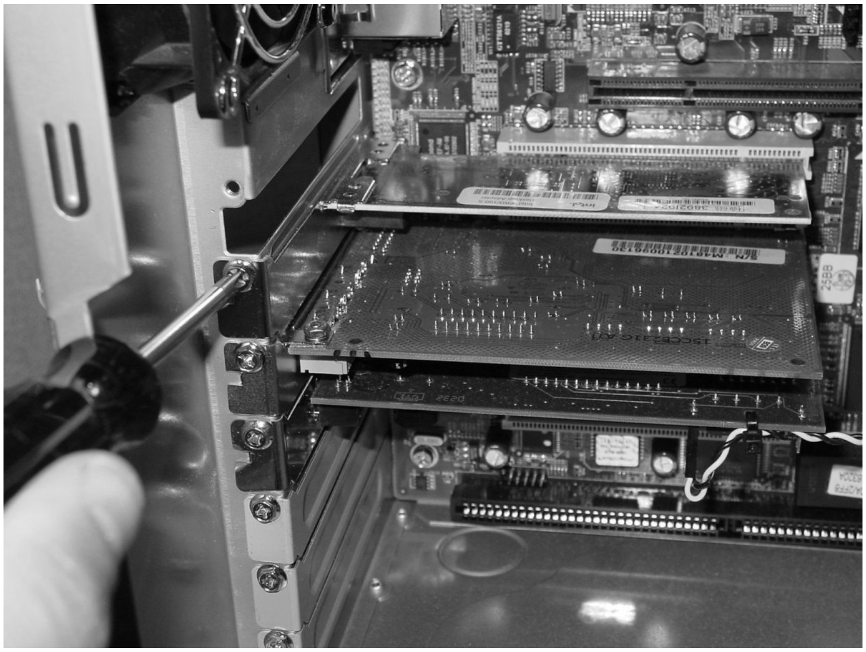
RX Network Card Installation

1. Carefully insert the connection tabs on the RX network card into the slot as shown. Ensure the card is completely seated into the slot.



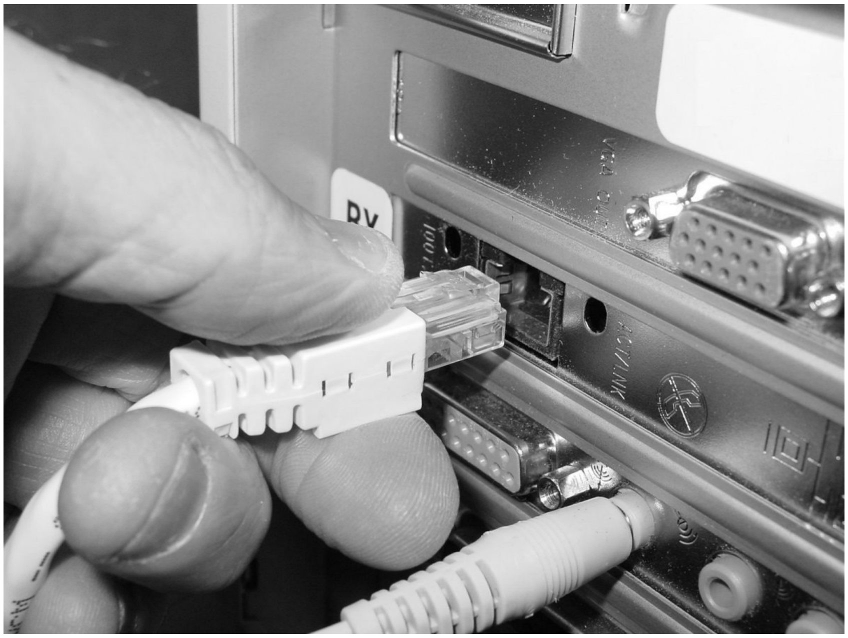
VIDEO CARD REMOVED FOR CLARITY

2. Secure the card into the chassis with the screw, as shown. Ensure the card is still completely seated into the slot.



VIDEO CARD REMOVED FOR CLARITY

3. If you have no other components to remove/install, complete "Side Panel Installation" on page 6-5.
4. Plug the RX network cable connector into the jack on the back of the RX network card. Push connector into the jack until it locks in place with a snap.



5. If applicable, perform the "Electrical Safety Tests" on page 4-9.

Audio Card Removal/Installation

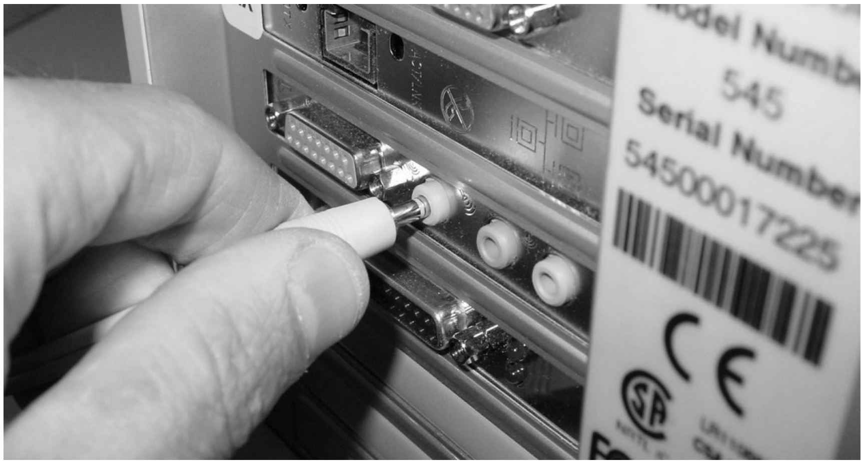
Audio Card FRU Kit No. 2017715-005

NOTE

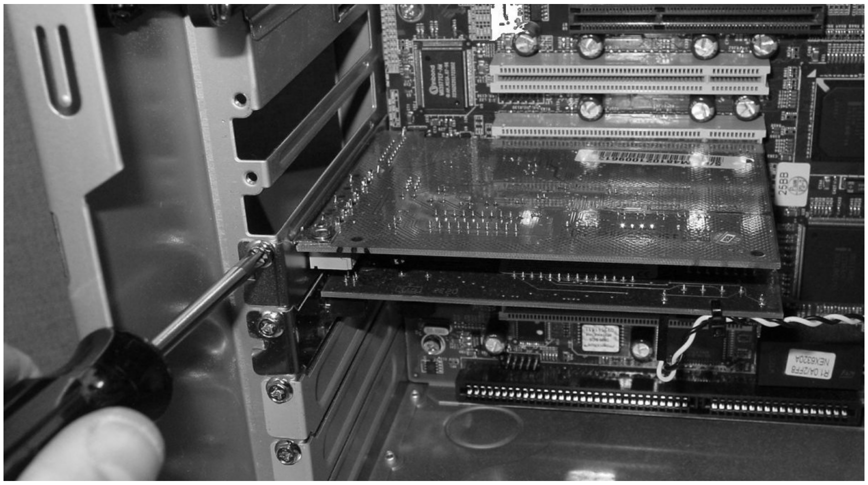
This procedure applies only to servers shipped with CIC Pro Version 4.0.x and later.

Audio Card Removal

1. Complete “Field Replacement Preparation” on page 6-4.
2. Loosen the screw securing the speaker output connector strain relief bracket, and unplug the speaker connector.

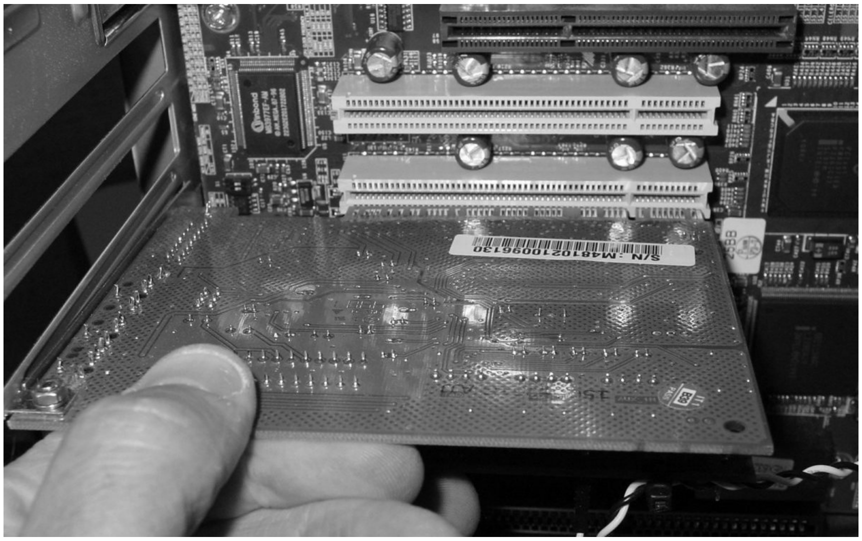


3. If necessary, complete “Side Panel Removal” on page 6-5.
4. Loosen and remove the screw securing the audio card to the chassis.



VIDEO & NETWORK CARDS REMOVED FOR CLARITY

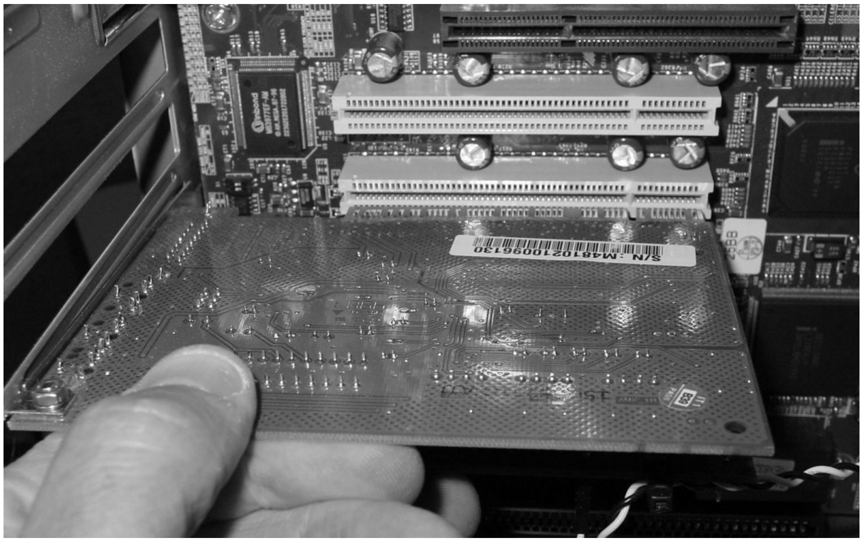
5. Carefully remove the audio card from the card slot.



VIDEO & NETWORK CARDS REMOVED FOR CLARITY

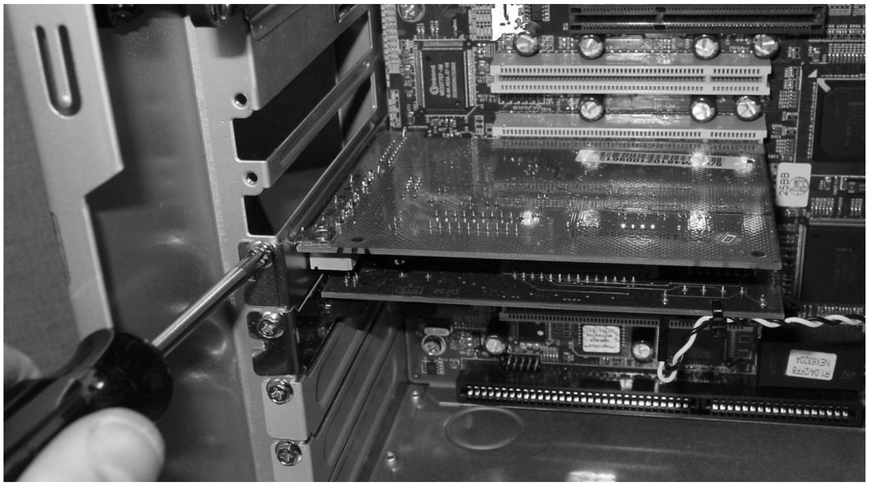
Audio Card Installation

1. Carefully insert the connection tabs on the audio card into the slot as shown. Ensure the card is completely seated into the slot.



VIDEO & NETWORK CARDS REMOVED FOR CLARITY

2. Secure the card into the chassis with the screw, as shown. Ensure the card is still completely seated into the slot.



VIDEO & NETWORK CARDS REMOVED FOR CLARITY

3. If you have no other components to remove/install, complete “Side Panel Installation” on page 6-5.
4. Plug the speaker connector into the speaker output jack. The speaker output jack is labeled SPK OUT, or marked with an icon.
5. A bracket is used as a strain relief and to hold the speaker connector in place. Loosen the screw on the bracket just enough to insert the speaker connector through the hole and into the speaker output jack. Make sure the connector is seated properly, then tighten the strain relief bracket screw to secure it.

NOTE

Accidental disconnection of the speaker cables will result in loss of audible patient alarms at the CIC monitoring location. Make sure the speaker connections at the PC tower and the speakers are properly secured with the provided relief bracket.

Model Numb
545
Serial Number
54500017225

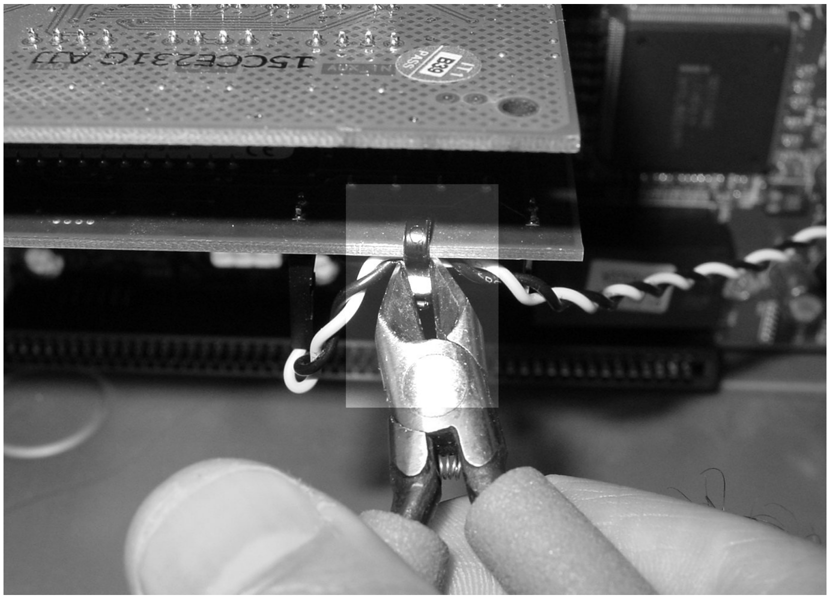
6. If applicable, perform the “Electrical Safety Tests” on page 4-9.

Watchdog Card Removal/Installation

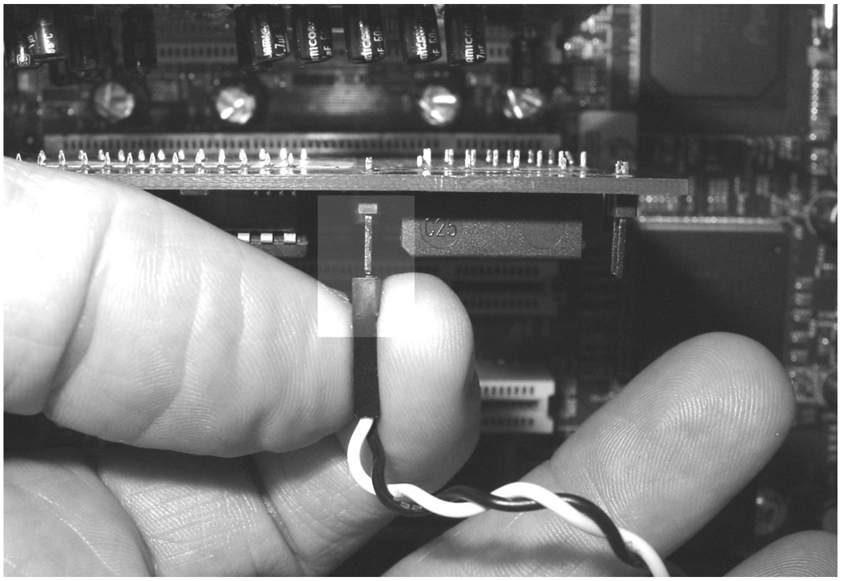
Watchdog Card FRU Kit No. 2017715-015

Watchdog Card Removal

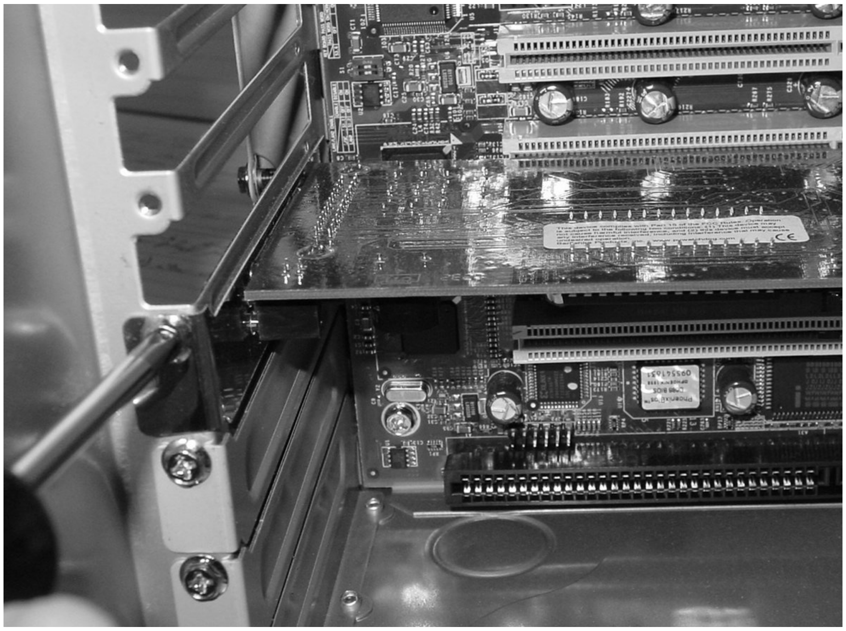
1. Complete “Field Replacement Preparation” on page 6-4.
2. If necessary, complete “Side Panel Removal/Installation” on page 6-5.
3. Cut the tie securing the black/white, (or red/black) wires to the watchdog card.



4. Disconnect the black/white, (or red/black) wires from the watchdog card.

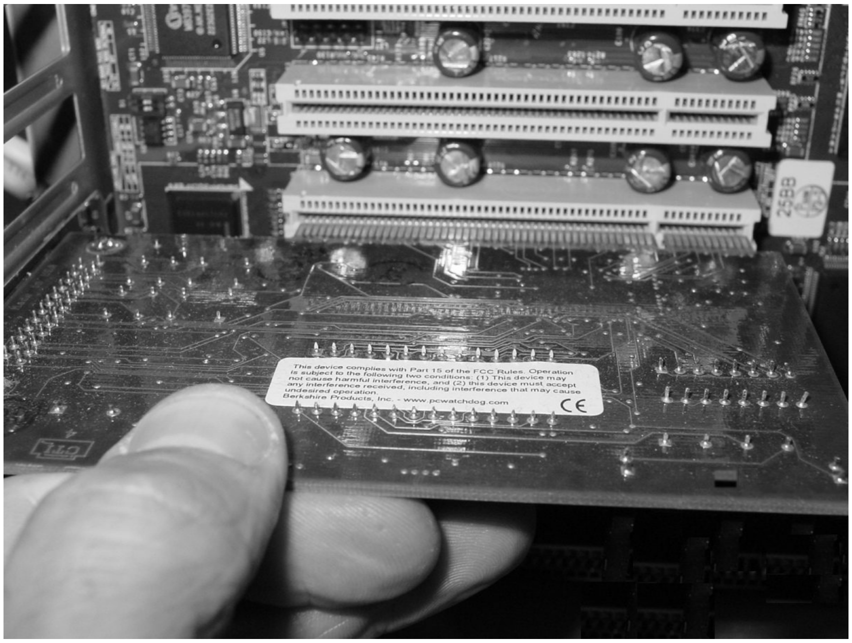


5. Loosen and remove the screw securing the watchdog card to the chassis.



VIDEO, NETWORK & AUDIO CARDS REMOVED FOR CLARITY

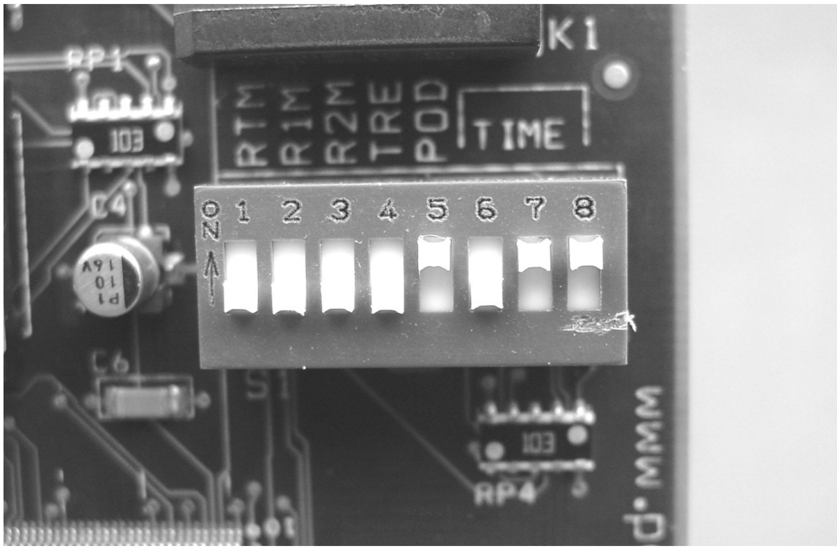
6. Carefully remove the watchdog card from the slot.


This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
Berkshire Products, Inc. - www.pcwatchdog.com
CE

VIDEO, NETWORK & AUDIO CARDS REMOVED FOR CLARITY

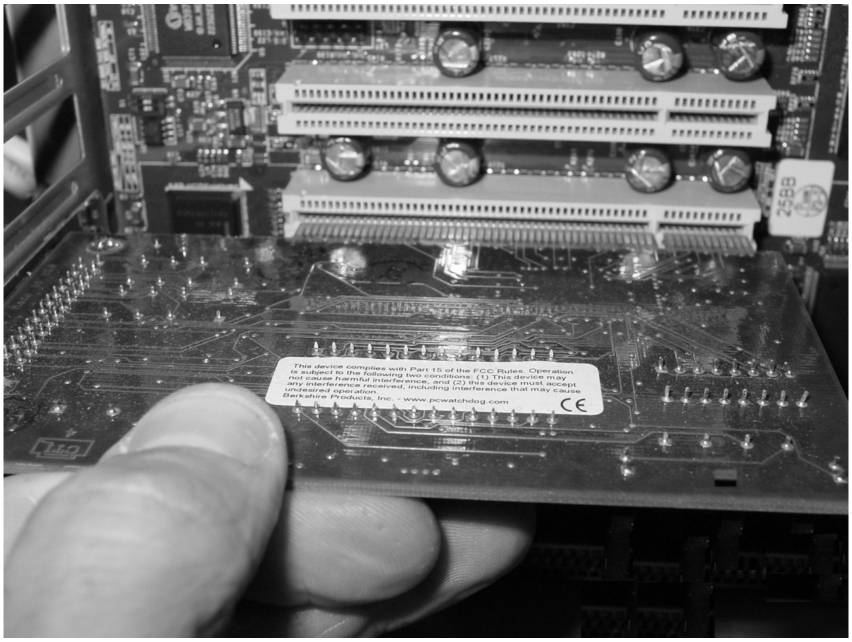
Watchdog Card Installation

1. Ensure the DIP switches on the watchdog card are in the following configuration:


K1
RP1
103
RTM
R1M
R2M
TRE
POD
TIME
C4
ON
1 2 3 4 5 6 7 8
C6
S1
103
RP4

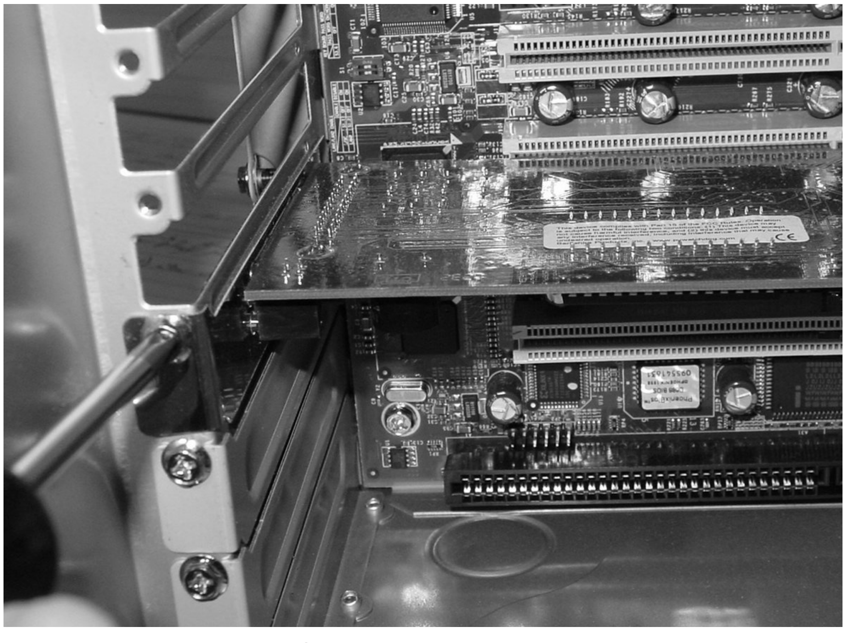
Watchdog Card Switch Settings		
Number	Position	Function
1	OFF	Relay #1 Temperature Mode (RTM)
2	OFF	Relay #1 Mode (R1M)
3	OFF	Relay #2 Mode (R2M)
4	OFF	Temperature Reset Enable (TRE)
5	ON	Power On Delay (POD)
6	OFF	Watchdog Delay Time #1
7	ON	Watchdog Delay Time #2
8	ON	Watchdog Delay Time #3

2. Carefully insert the connection tabs on the watchdog card into the slot as shown. Ensure the card is completely seated into the slot.


This device complies with Part 15 of the FCC Rules. Operation
is subject to the following two conditions: (1) This device may
not cause harmful interference, and (2) this device must accept
any interference received, including interference that may cause
undesired operation.
Berkshire Products, Inc. - www.pcwatchdog.com
CE

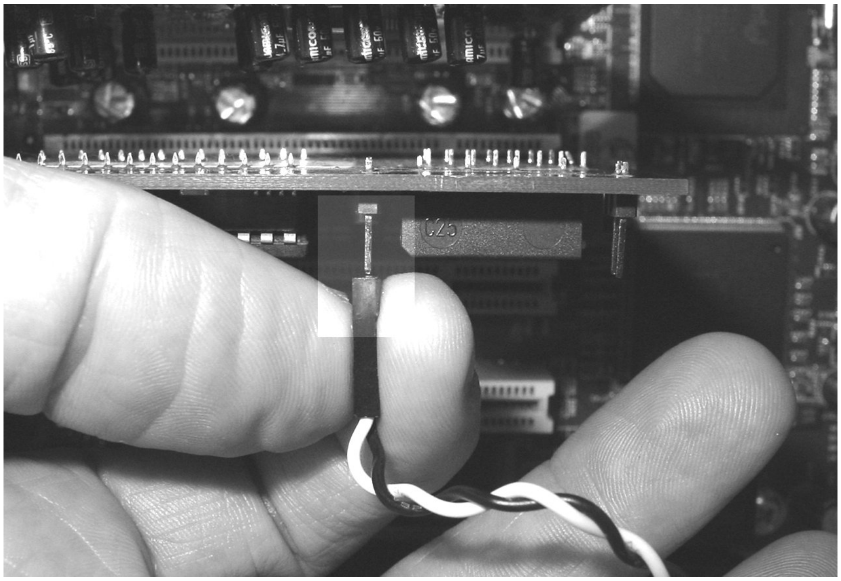
VIDEO, NETWORK & AUDIO CARDS REMOVED FOR CLARITY

3. Secure the watchdog card into the chassis with the screw, as shown. Ensure the card is still completely seated into the slot.

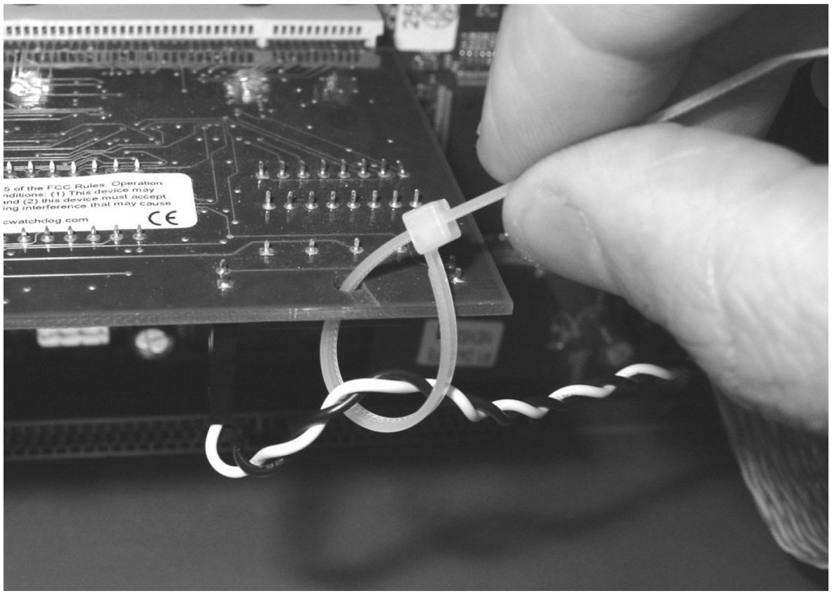


VIDEO, NETWORK & AUDIO CARDS REMOVED FOR CLARITY

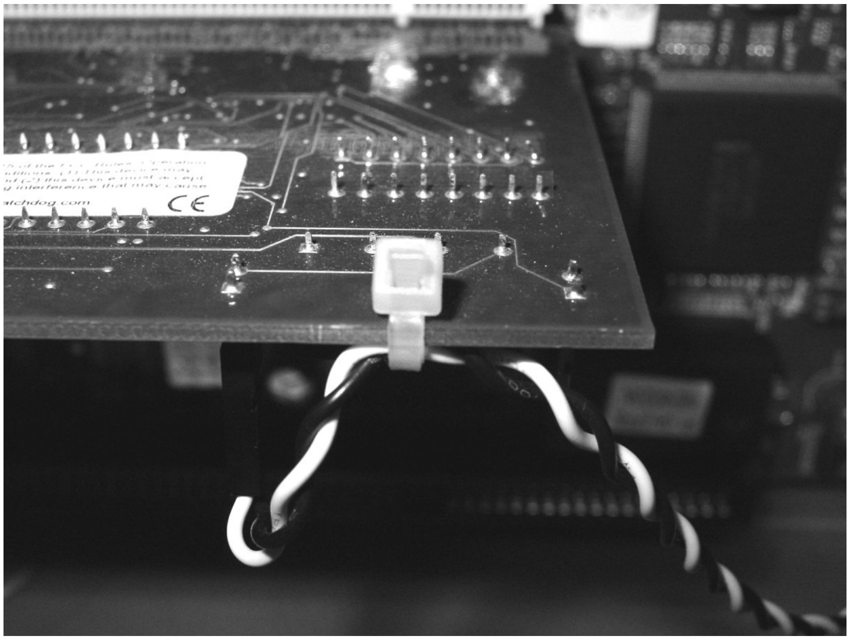
4. Connect the black/white (, or red/black) wires to the watchdog card, as shown, with the white (, or red) wire positioned to the outside.



5. To secure the excess wire, loop a wire tie through the watchdog card and around the wires, as shown.


5 of the FCC Rules. Operation
nditions: (1) This device may
nd (2) this device must accept
ing interference that may cause
cwatchdog.com
CE

6. Pull the wire tie tight, and trim any excess tie, as shown.



7. If you have no other components to remove/install, complete “Side Panel Installation” on page 6-5.
8. If applicable, perform the “Electrical Safety Tests” on page 4-9.

Motherboard Removal/Installation

Motherboard with DUAL CPU FRU Kit No. 2017715-007

Motherboard with SINGLE CPU FRU Kit No. 2017715-012

NOTE

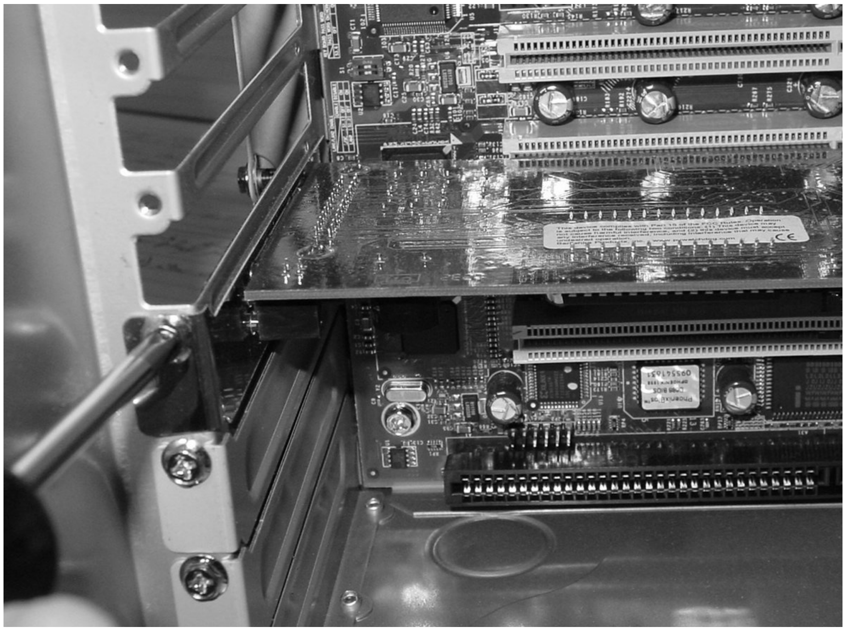
This procedure applies only to servers shipped with CIC Pro Version 4.0.x and later.

NOTE

Motherboard replacement may require server license re-configuration. Refer to the GE “Unity Network® Information Suite (IS) Server License Configuration Guide”

Motherboard Removal

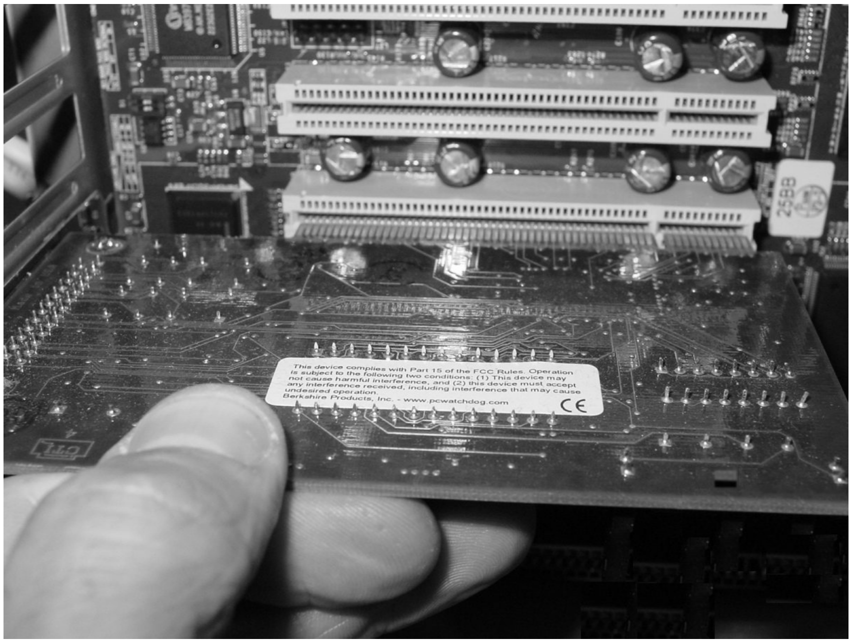
1. Complete “Field Replacement Preparation” on page 6-4
2. Remove all jacks and plugs from the computer back panel.
3. Complete “Side Panel Removal” on page 6-5.
4. Complete “Chassis Fan Removal” on page 6-23.
5. Complete “CPU Fan Removal” on page 6-27.
6. Complete “Video Card Removal” on page 6-29.
7. Complete “RX Network Card Removal” on page 6-33.
8. Complete “Audio Card Removal” on page 6-37.
9. Loosen and remove the screw securing the watchdog card to the chassis.



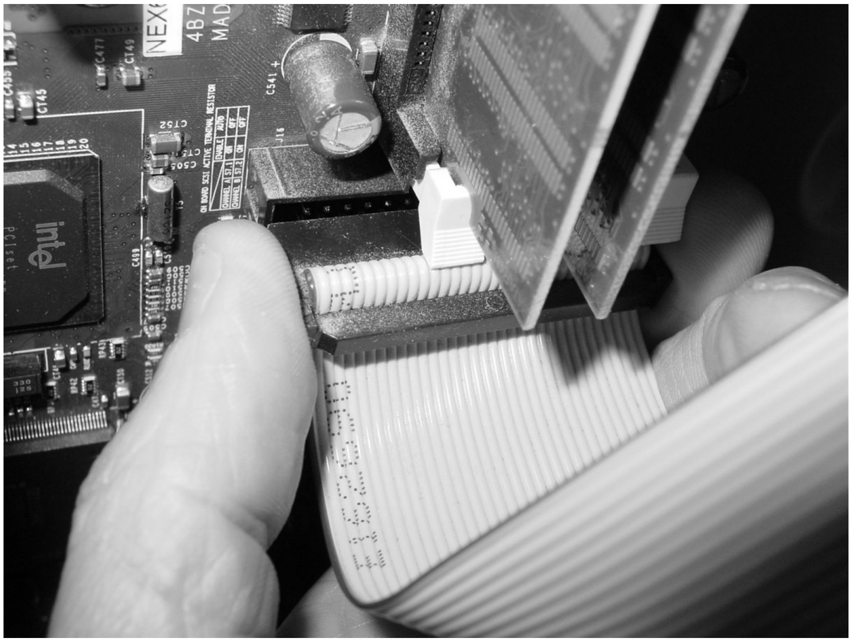
10. Carefully remove the watchdog card from the slot.

NOTE

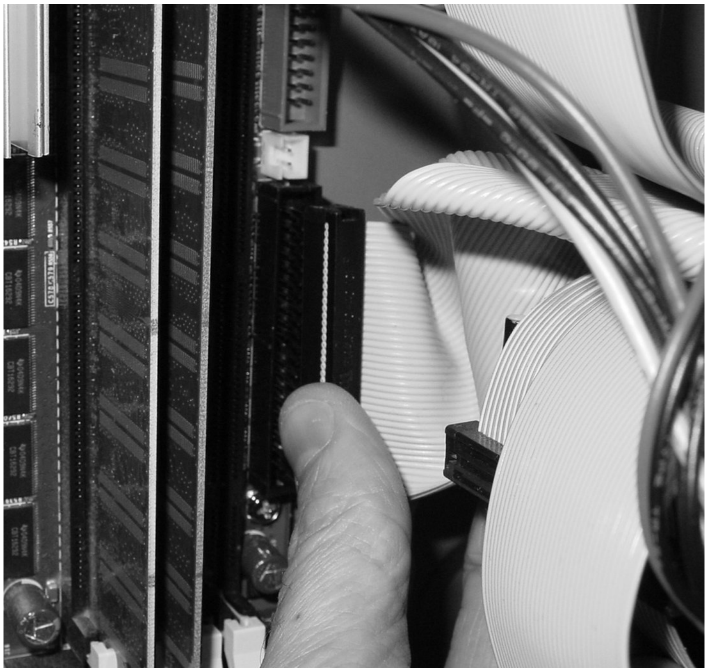
The sensor connection wires are still attached to the watchdog card. Do not remove the sensor wires. Set the watchdog card aside on the bottom of the chassis for the remainder of the motherboard removal procedure.



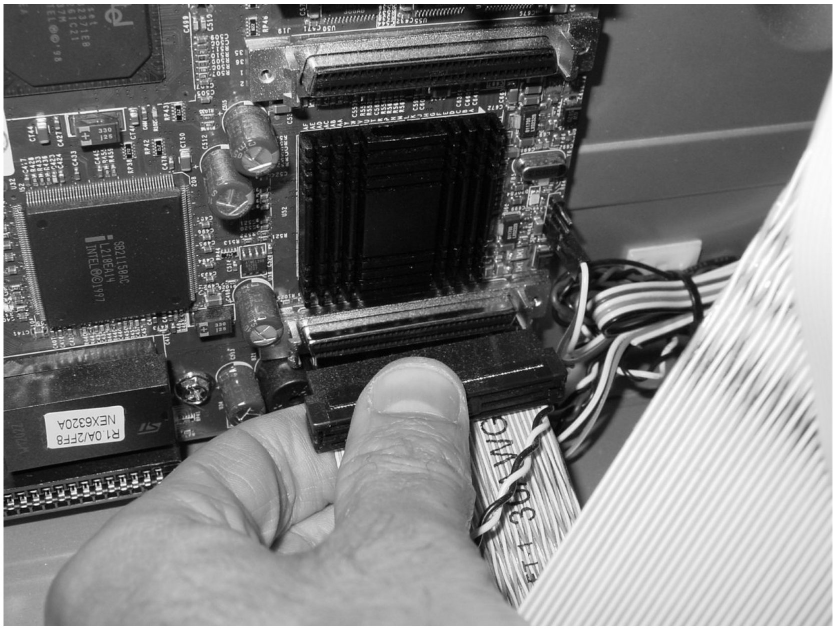
11. Carefully disconnect the floppy data ribbon cable plug from the motherboard.



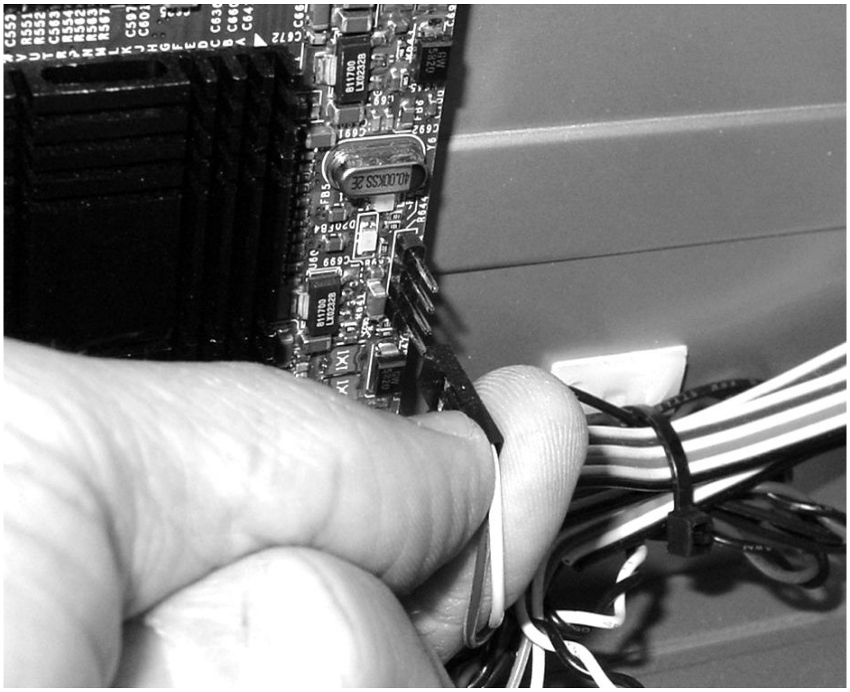
12. Carefully disconnect the cd data ribbon cable plug from the motherboard.



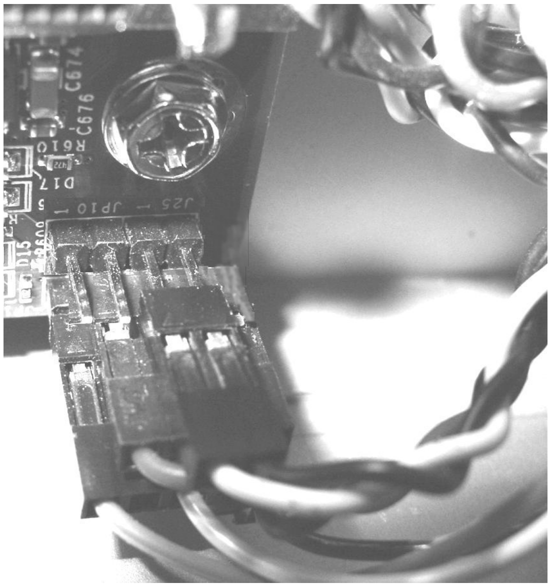
13. Carefully disconnect the hard drive data ribbon cable plug from the motherboard.

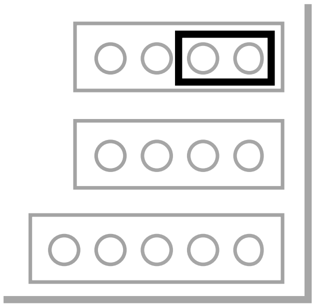


14. Carefully disconnect the red/white LED connector from the bottom two connections in the vertical connection block along the lower right edge of the motherboard.

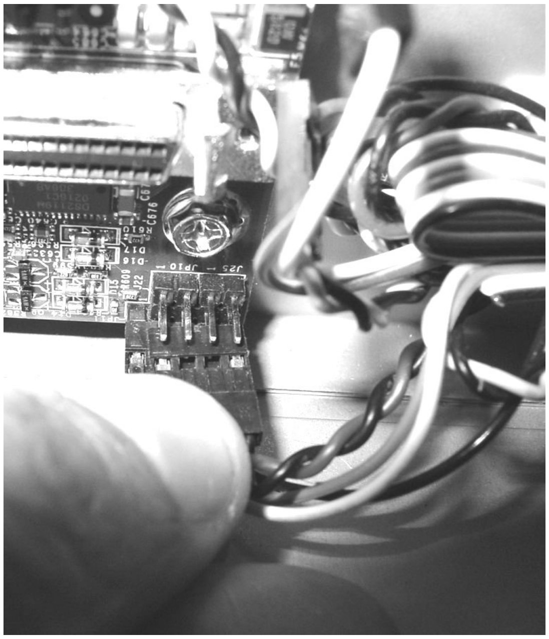


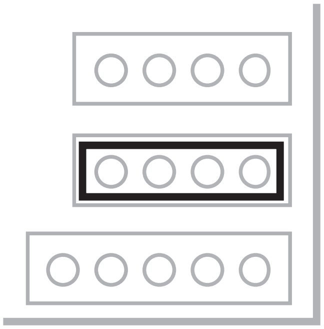
15. Carefully disconnect the black/white (or red/black) watchdog connector from the center two connections in the top connection block at the bottom right corner of the motherboard.



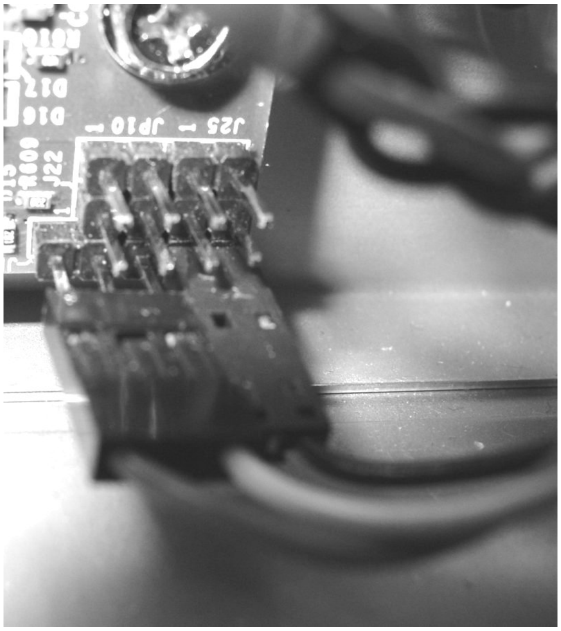


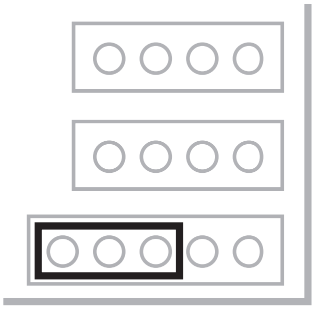
16. Carefully disconnect the red/black speaker connector from the middle connection block at the bottom right corner of the motherboard.



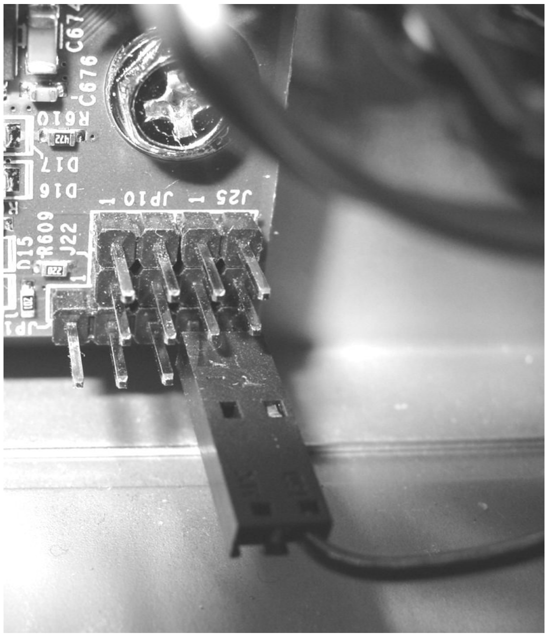


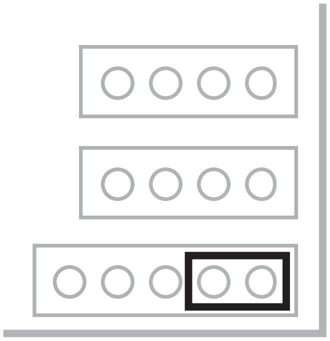
17. Carefully disconnect the green/white LED connector from the left three connections in the bottom connection block at the bottom right corner of the motherboard.





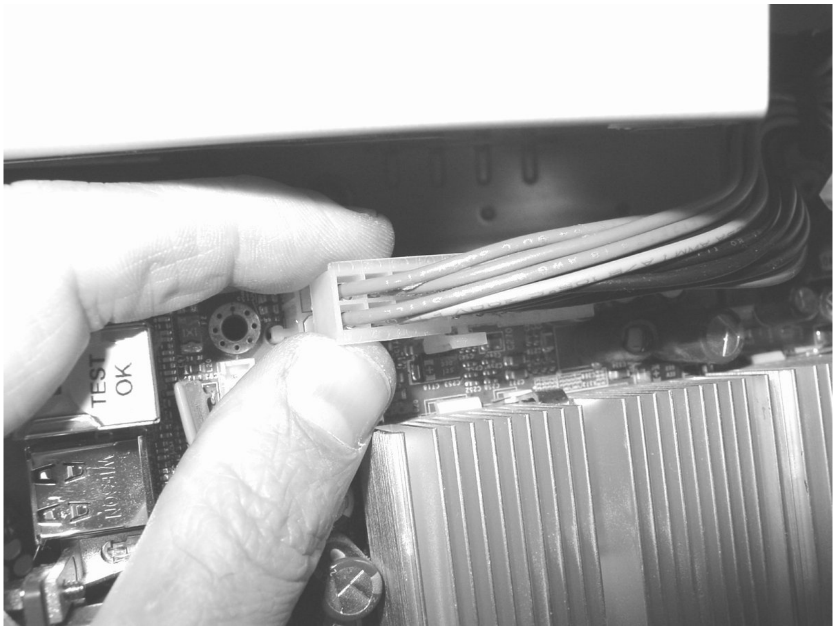
18. Carefully disconnect the black connector from the right two connections in the bottom connection block at the bottom right corner of the motherboard.





19. Remove the nine screws securing the motherboard to the chassis.

20. Taking care not to bend or damage any tabs or other components on the motherboard, move the motherboard out from the back of the chassis far enough to disconnect the power plug at the top of the motherboard. Disconnect the power plug.



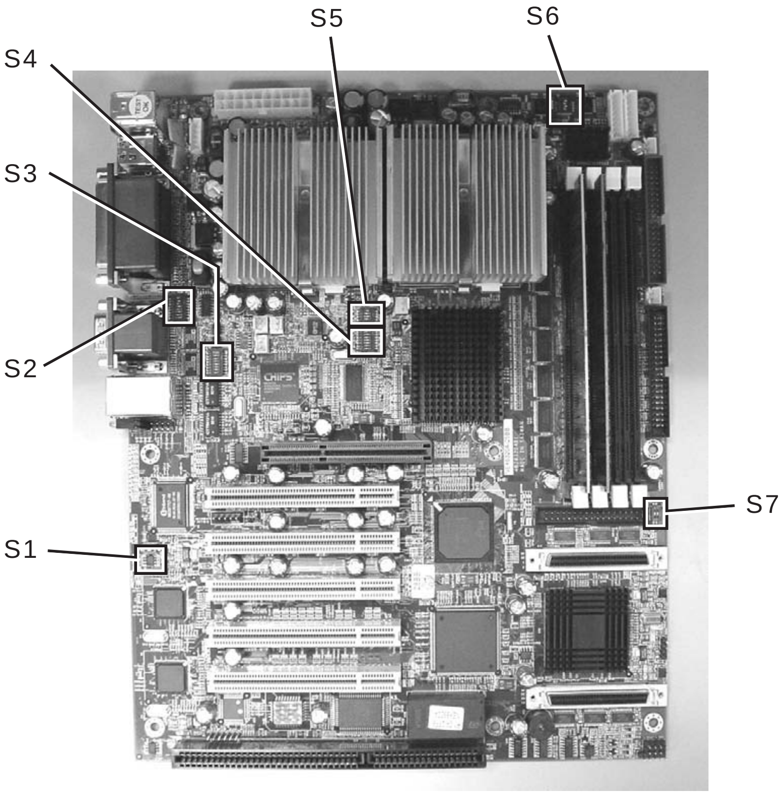
21. Carefully remove the motherboard from the chassis. Be careful not to bang, twist, bend or put undue pressure on the motherboard.

Motherboard Installation

NOTE

The procedure applies only to servers shipped with CIC Pro product codes AA1, 3F and 4T

1. Verify the motherboard revision is 25BB. It is identified by a sticker located near the card slots or the reverse side of the motherboard.
2. Verify the seven switch blocks on the motherboard are configured to the following settings:

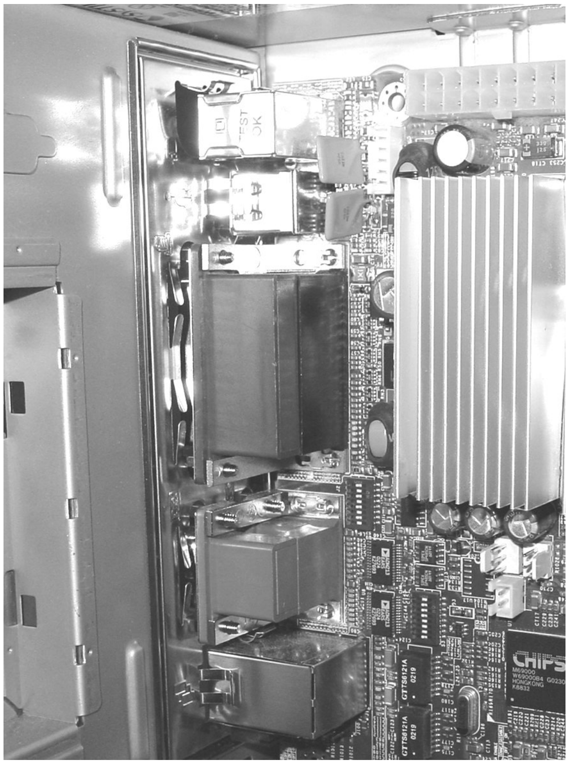


Motherboard product codes:

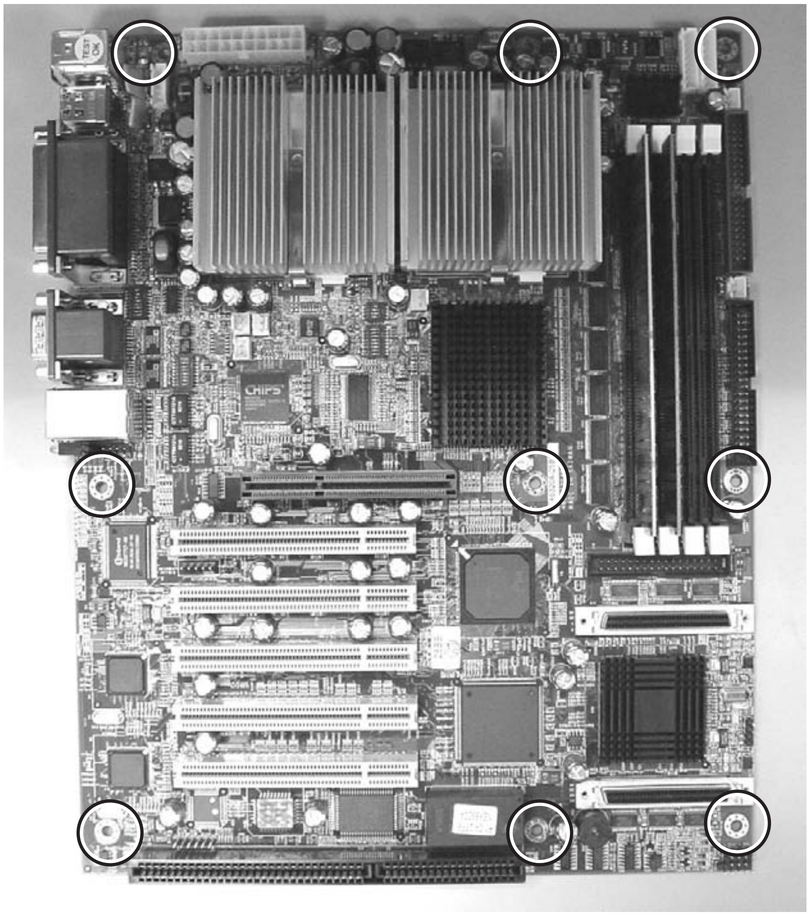
- 4T = SN _ _**4T**_ _ _ _G
- AA1 = SN **AA1** _ _ _ _ _ _ _ _ _ _ _

Switch – Setting						
S1	S2	S3	S4	S5	S6	S7
S1.1 OFF	S2.1 OFF	S3.1 ON	S4.1 OFF	S5.1 ON	S6.1 On	S7.1 Off
S1.2 OFF	S2.2 ON	S3.2 OFF	S4.2 OFF	S5.2 OFF	S6.2 Off	S7.2 Off
	S2.3 OFF	S3.3 OFF	S4.3 ON	S5.3 ON	S6.3 On	
	S2.4 ON	S3.4 OFF	S4.4 OFF	S5.4 OFF	S6.4 Off	
	S2.5 OFF	S3.5 ON	S4.5 ON			
	S2.6 ON	S3.6 ON	S4.6 ON			
	S2.7 OFF	S3.7 ON	S4.7 OFF			
	S2.8 ON	S3.8 OFF	S4.8 OFF			

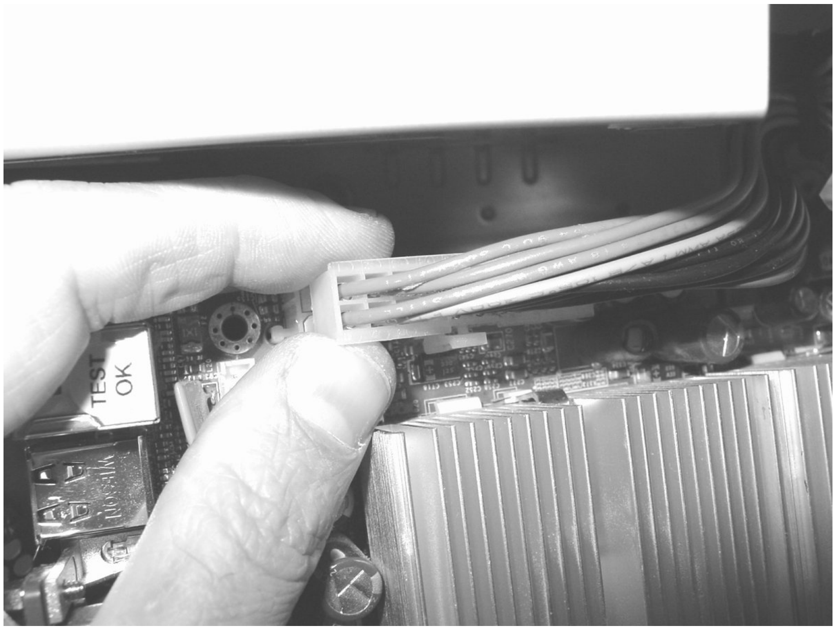
3. Carefully insert the motherboard into the chassis, with the I/O ports positioned at the top left. Be careful not to bang, twist, bend or put undue pressure on the motherboard.
4. Insert the I/O ports through the I/O shield at the back of the chassis.



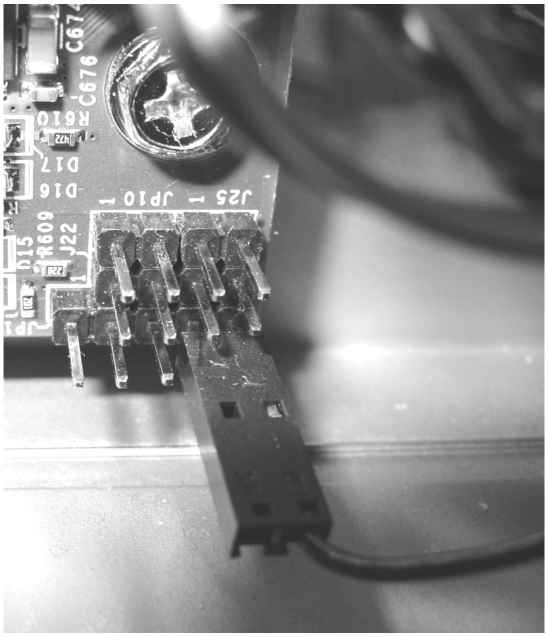
5. Secure the motherboard to the chassis with nine screws, at the locations shown. Torque the screws to 6 inch-pounds.

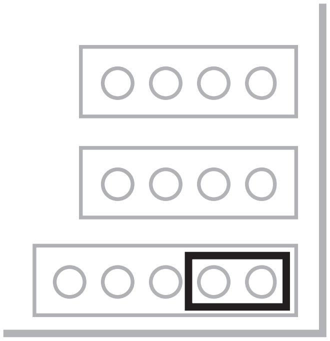


6. Carefully connect the power plug into the socket at the top of the motherboard.

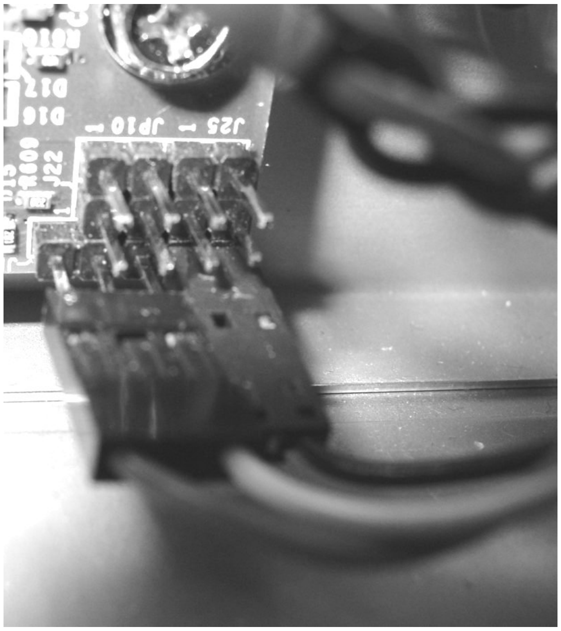


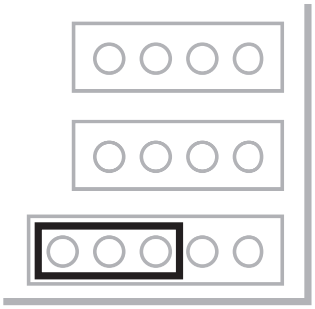
7. Carefully connect the black connector to the right two connections in the bottom connection block at the bottom right corner of the motherboard. Position the connector with the black lead to the right.


C674
C676
R610
D17
D16
JP10
J25
D15
R609
J22
JP1

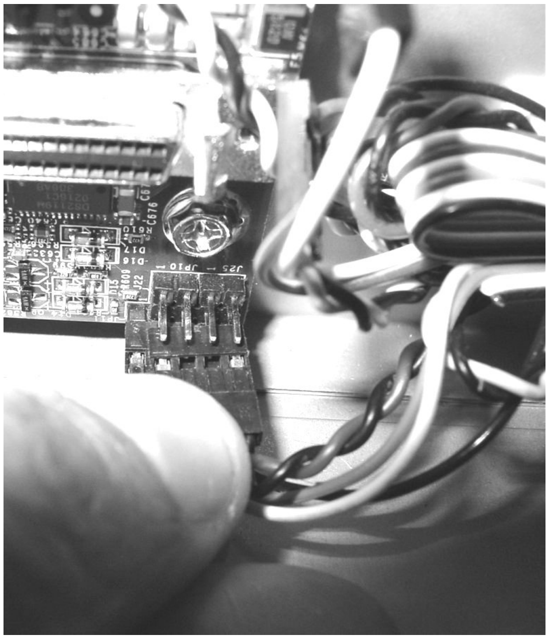


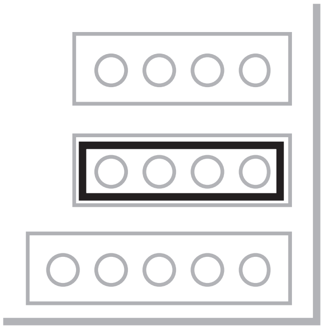
8. Carefully connect the green/white LED connector to the left three connections in the bottom connection block at the bottom right corner of the motherboard. Position the connector with the white lead to the right.


R610
D17
D16
JP10
J25
D15
R609
J22

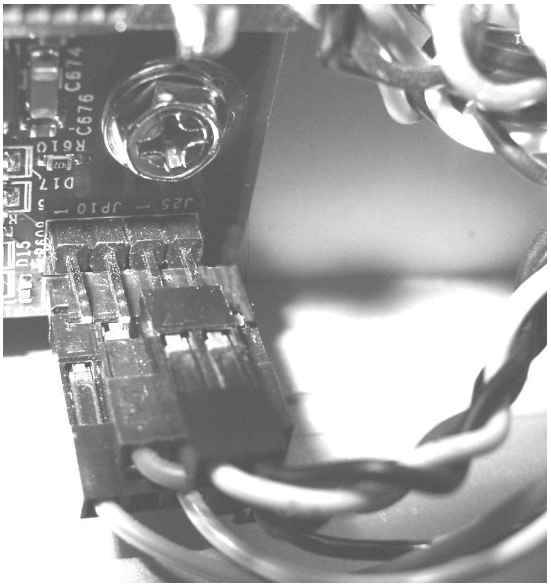


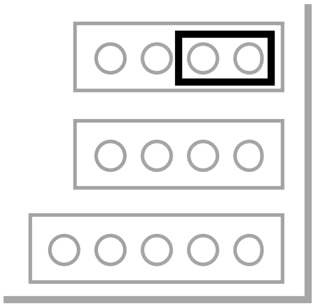
9. Carefully connect the red/black speaker connector to the middle connection block at the bottom right corner of the motherboard. Position the connector with the black lead to the right.



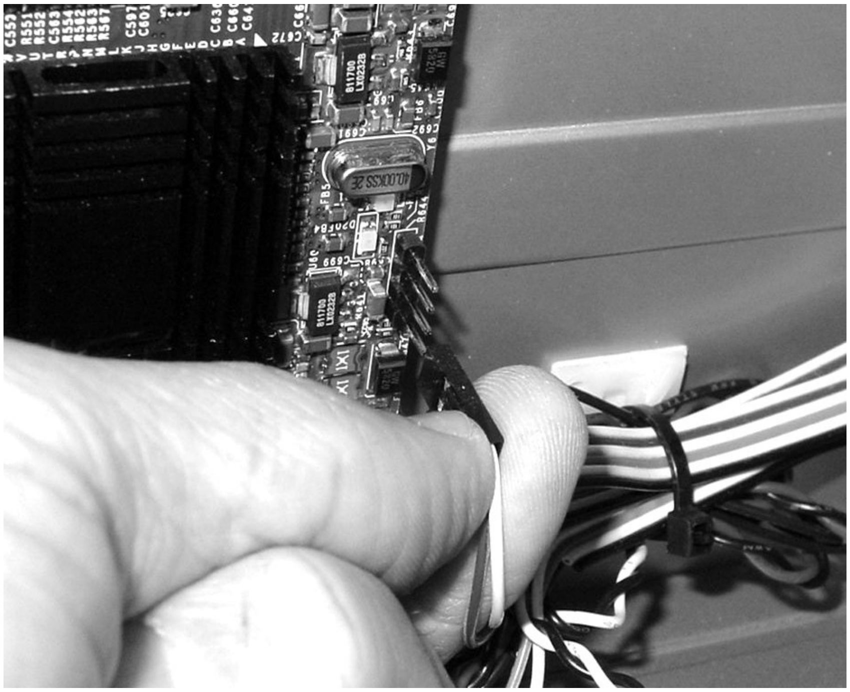


10. Carefully connect the black/white (or red/black) watchdog connector to the center two connections in the top connection block at the bottom right corner of the motherboard. Position the connector with the black lead to the right.

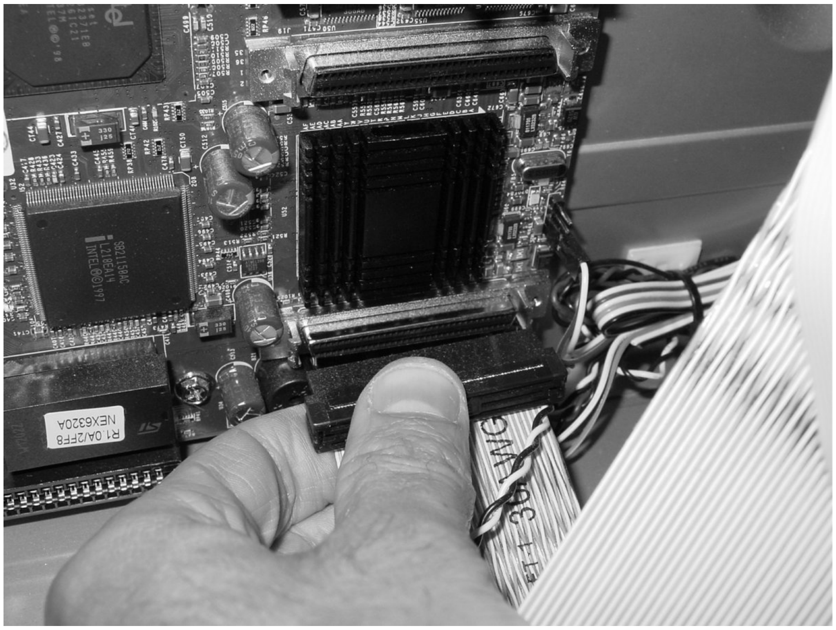




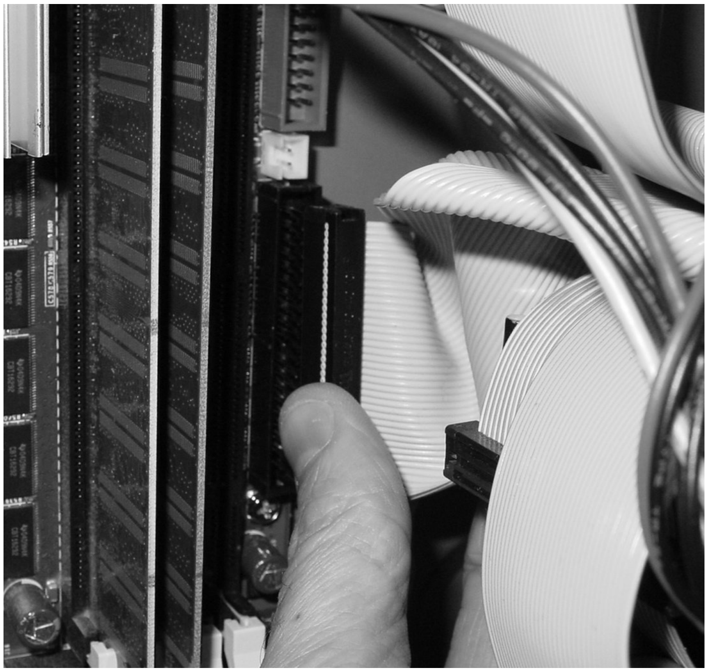
11. Carefully connect the red/white LED connector to the bottom two connections in the vertical connection block along the lower right edge of the motherboard. Position the connector with the white lead on top.



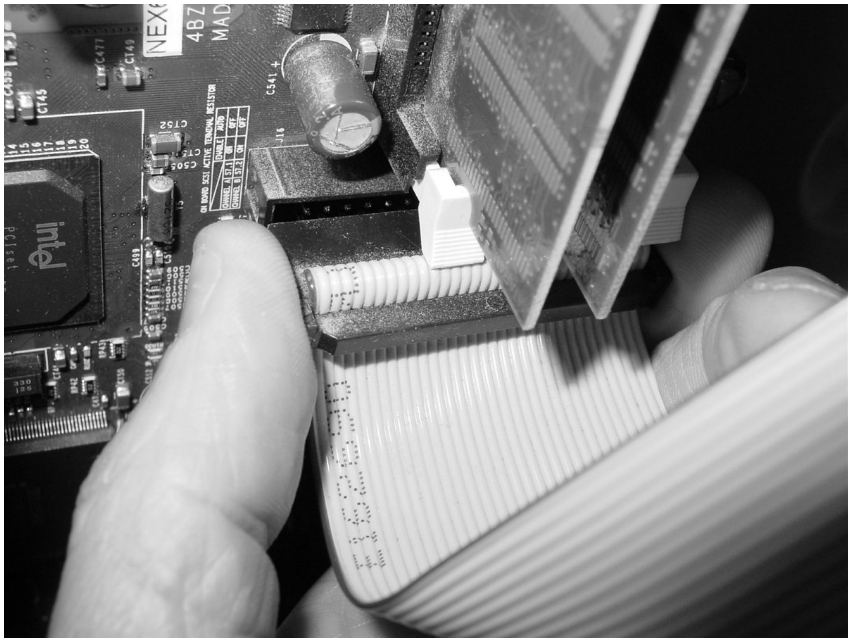
12. Carefully connect the hard drive data ribbon cable plug to the motherboard.



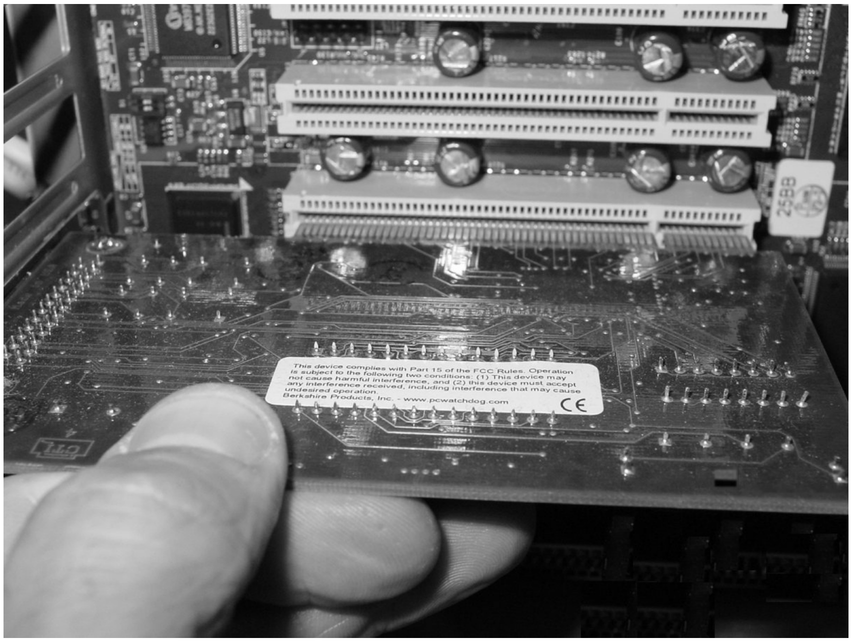
13. Carefully connect the cd data ribbon cable plug to the motherboard.



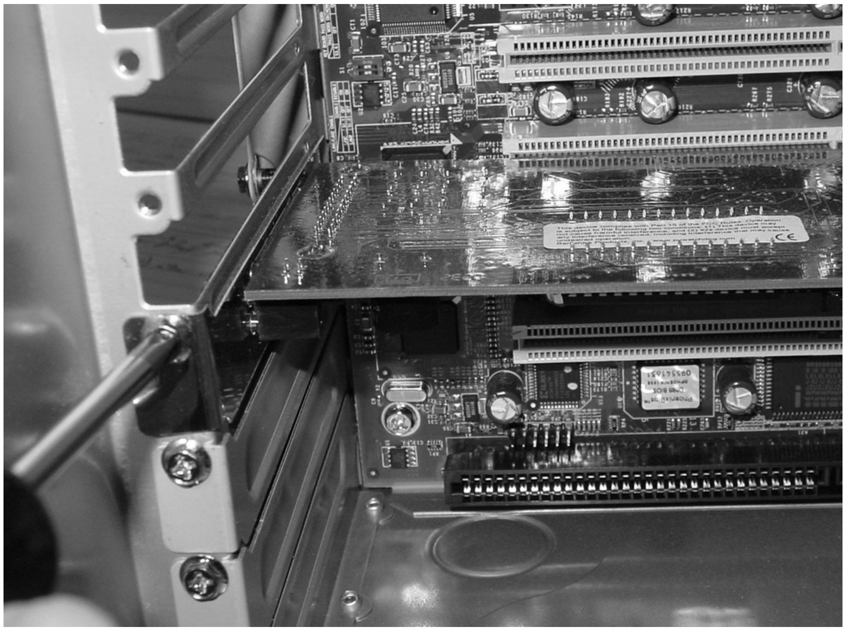
14. Carefully connect the floppy data ribbon cable plug to the motherboard.



15. Carefully insert the connection tabs on the watchdog card into the slot as shown. Ensure the card is completely seated into the slot.


This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
Berkshire Products, Inc. - www.pcwatchdog.com
CE

16. Secure the watchdog card into the chassis with the screw, as shown. Ensure the card is still completely seated into the slot.



17. Complete “Audio Card Installation” on page 6-39.

18. Complete “RX Network Card Installation” on page 6-35.

19. Complete “Video Card Installation” on page 6-31.
20. Complete “CPU Fan Installation” on page 6-28.
21. Complete “Chassis Fan Installation” on page 6-24.
22. Complete “Side Panel Installation” on page 6-5.
23. If applicable, perform the “Electrical Safety Tests” on page 4-9.

Power Supply Removal/Installation

Power Supply FRU Kit No. 2017715-014

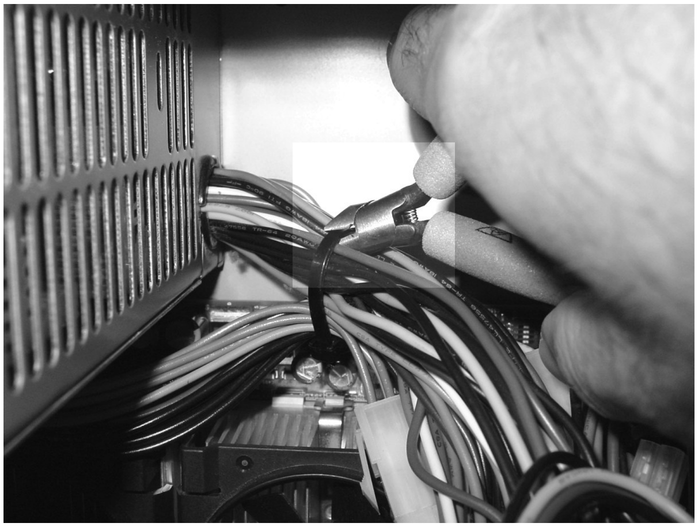
Power Supply Removal

WARNING

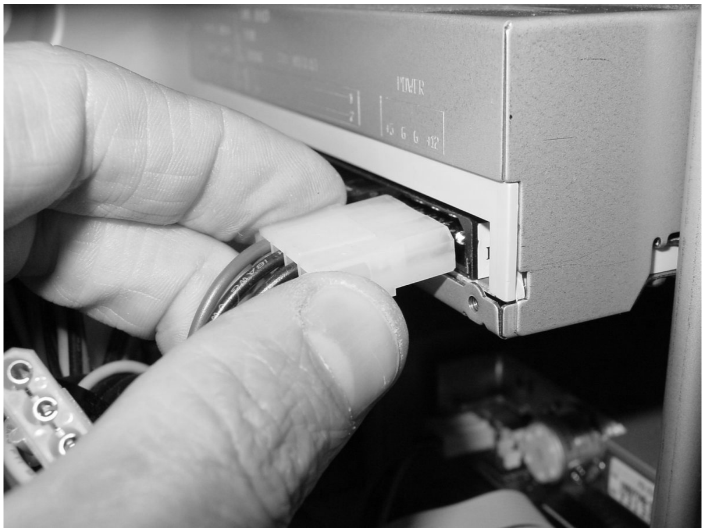
NEVER open the power supply covers. There are no field serviceable components inside. Capacitors inside the case present a shock hazard even with the power switched off.

---

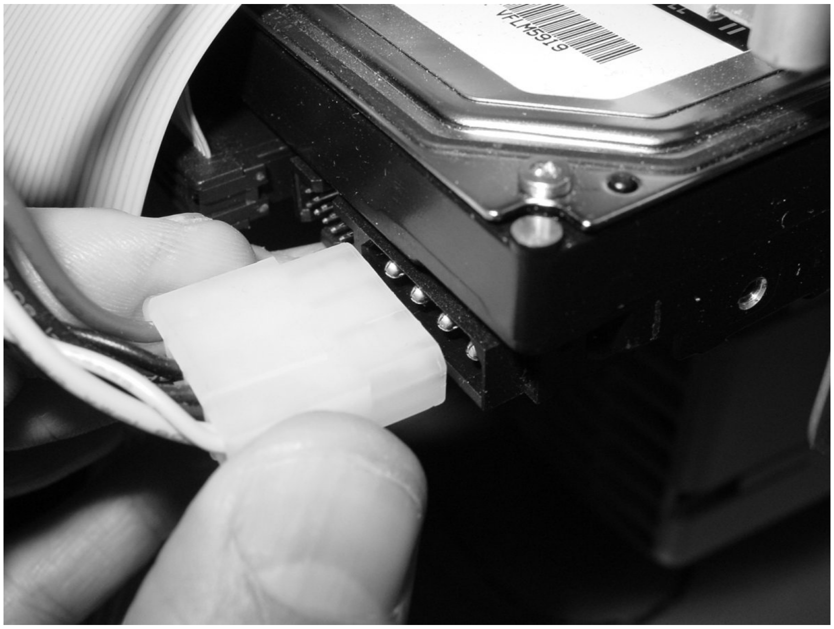
1. Complete "Field Replacement Preparation" on page 6-4.
2. Complete "Side Panel Removal" on page 6-5.
3. Cut the tie binding the power supply cable and the motherboard power cable extension together.



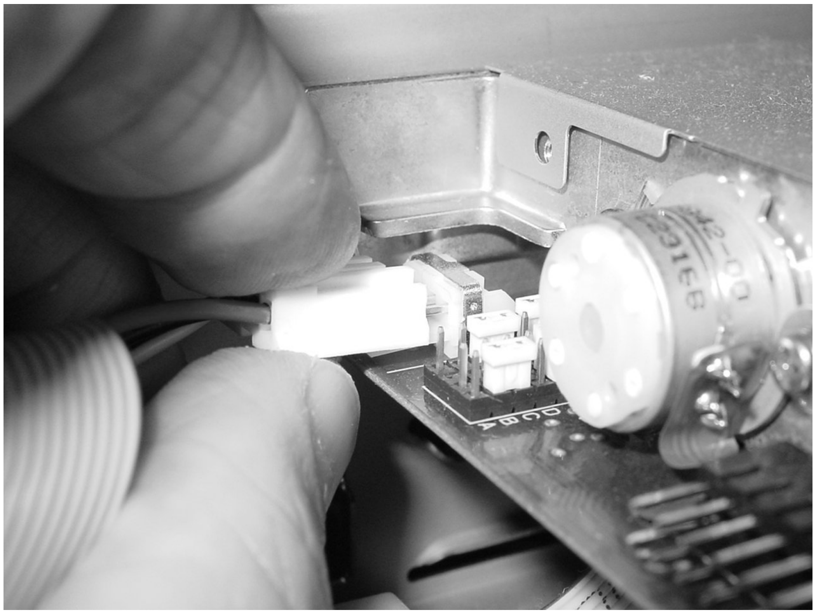
4. Carefully disconnect the power cable from the back of the CD drive.



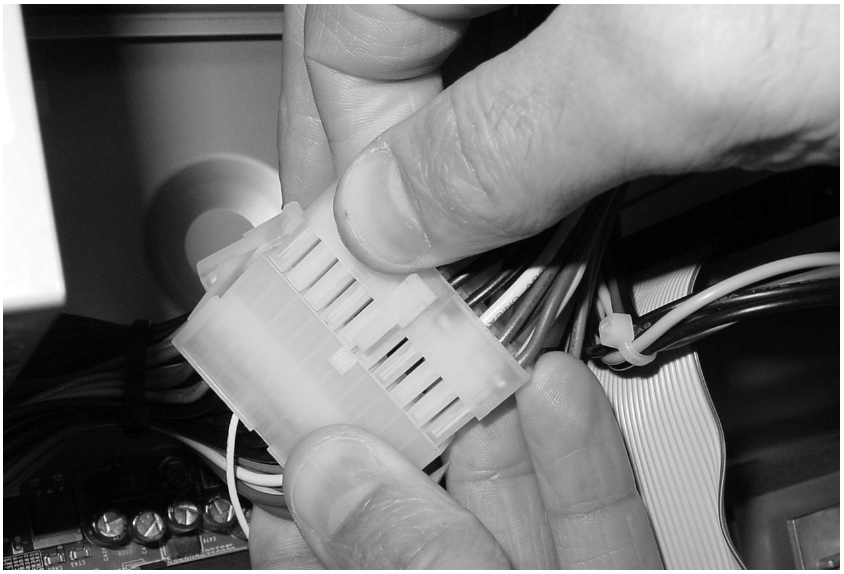
5. Carefully disconnect the power cable from the back of the hard drive.



6. Carefully disconnect the power cable from the back of the floppy drive.

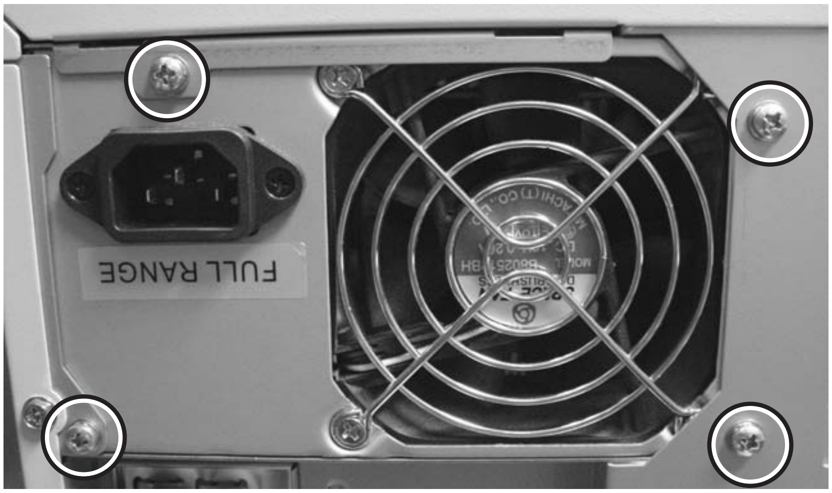


7. Carefully disconnect the power cable from motherboard power cable extension.

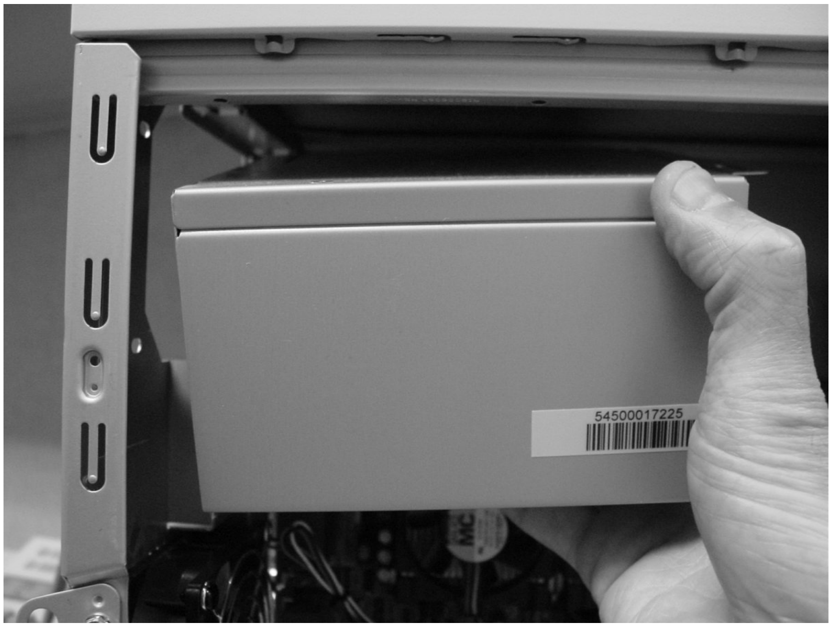


8. Remove the four screws securing the power supply to the back of the chassis, at the locations shown in the figure.

CAUTION
Support the power supply during removal to prevent it from falling and damaging other components inside the CIC Pro server.



9. Carefully remove the power supply from the chassis. Cut any wire ties, as required.



WARNING
NEVER open the power supply covers. There are no field serviceable components inside. Capacitors inside the case present a shock hazard even with the power switched off.

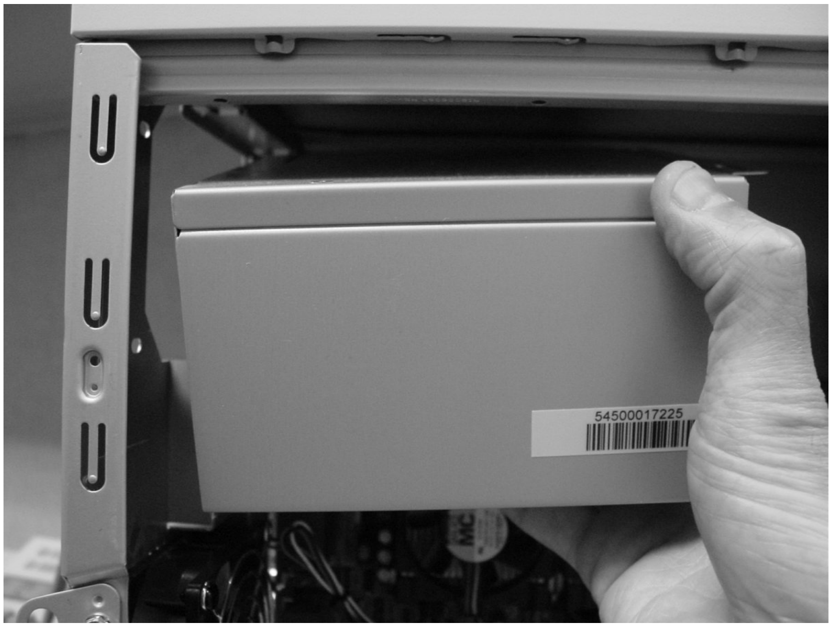
Power Supply Installation

WARNING
NEVER open the power supply covers. There are no field serviceable components inside. Capacitors inside the case present a shock hazard even with the power switched off.

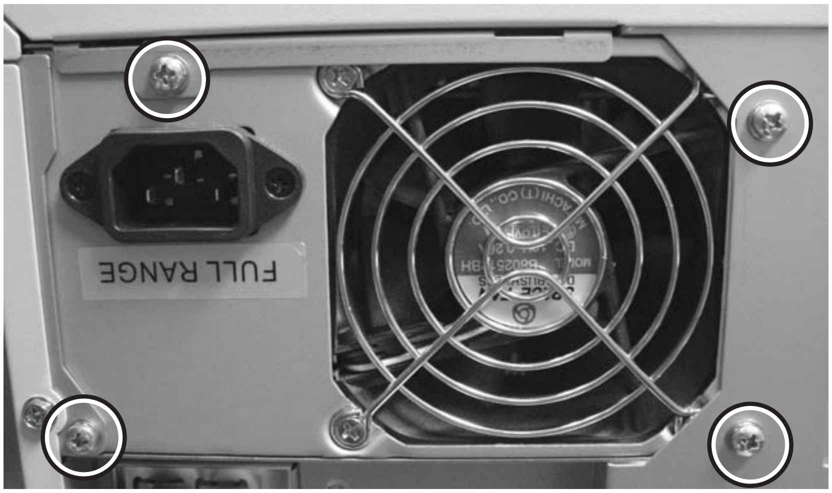
1. Position the power supply as shown against the inside top back corner of the chassis.

CAUTION
Support the power supply until it is secured to the chassis to prevent it from falling and damaging other components inside the

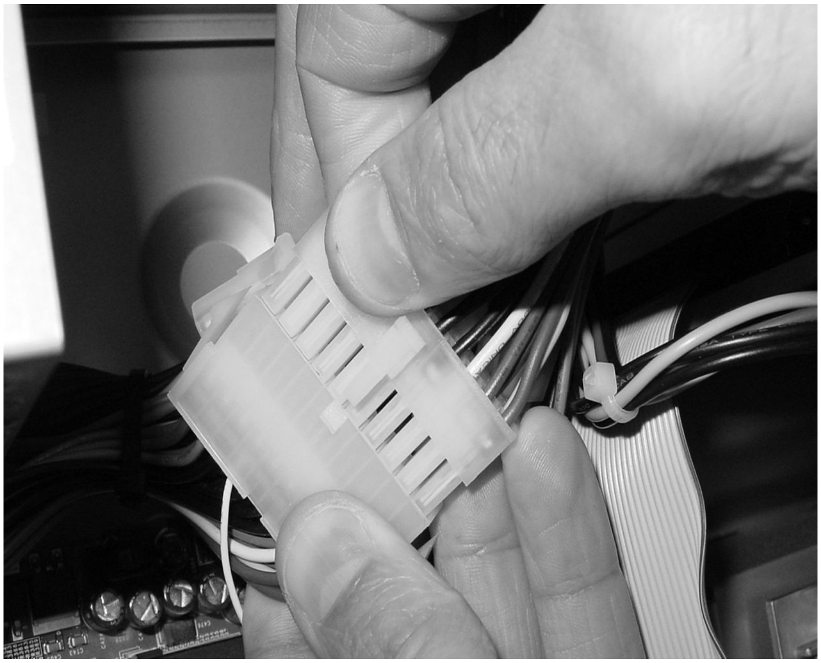
CIC Pro server.



2. Align the screw holes in the power supply and the chassis at the locations shown. Secure the power supply to the chassis with four screws.



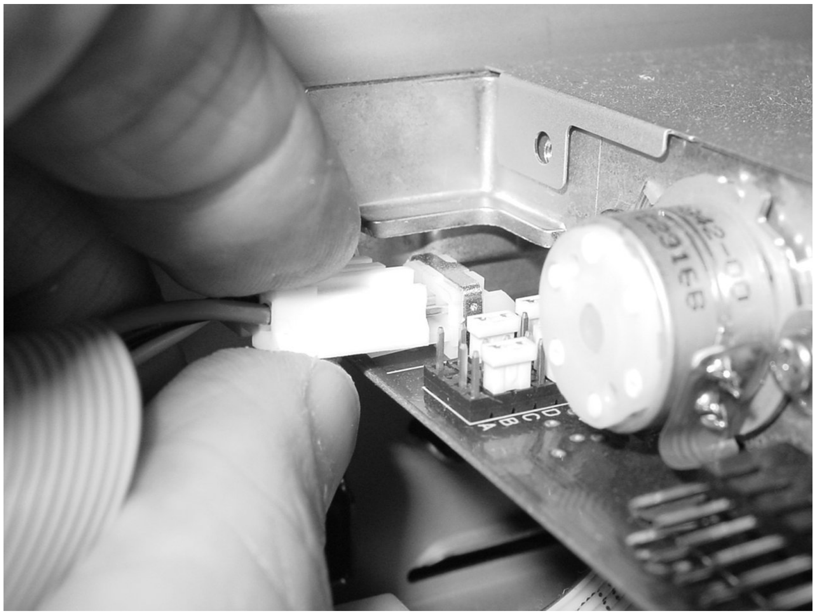
3. Carefully connect the power cable and the motherboard power cable extension together.



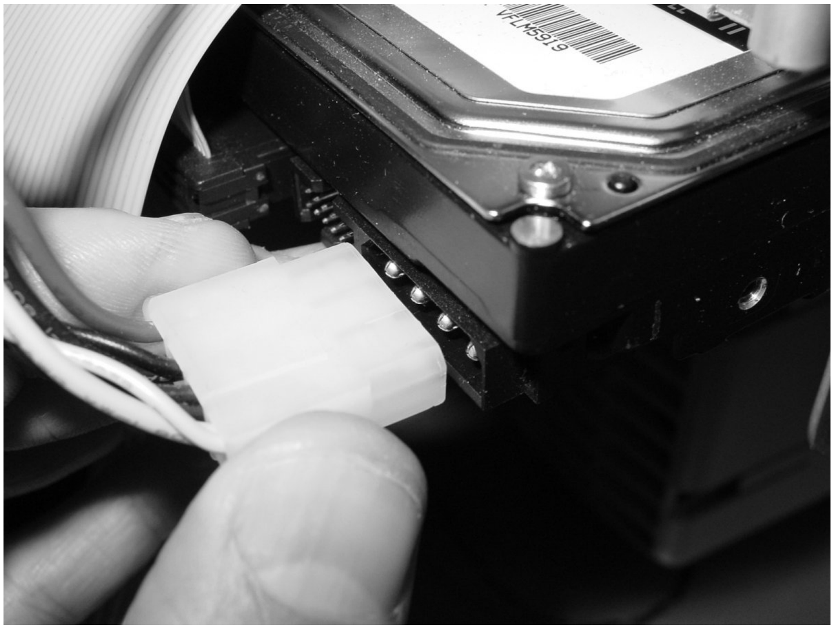
4. Carefully connect the floppy power cable to the back of the floppy drive.

NOTE

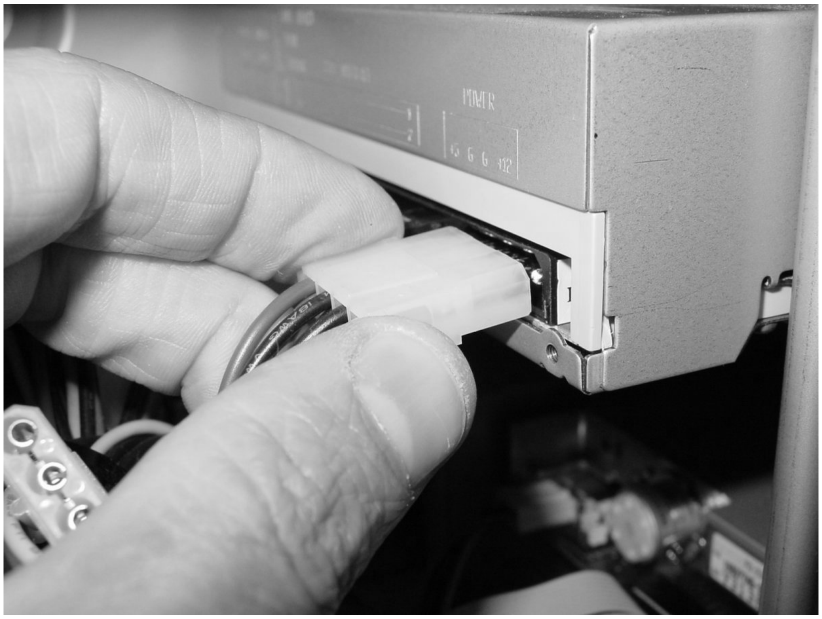
The floppy power cable is a jumper off the hard drive power cable.



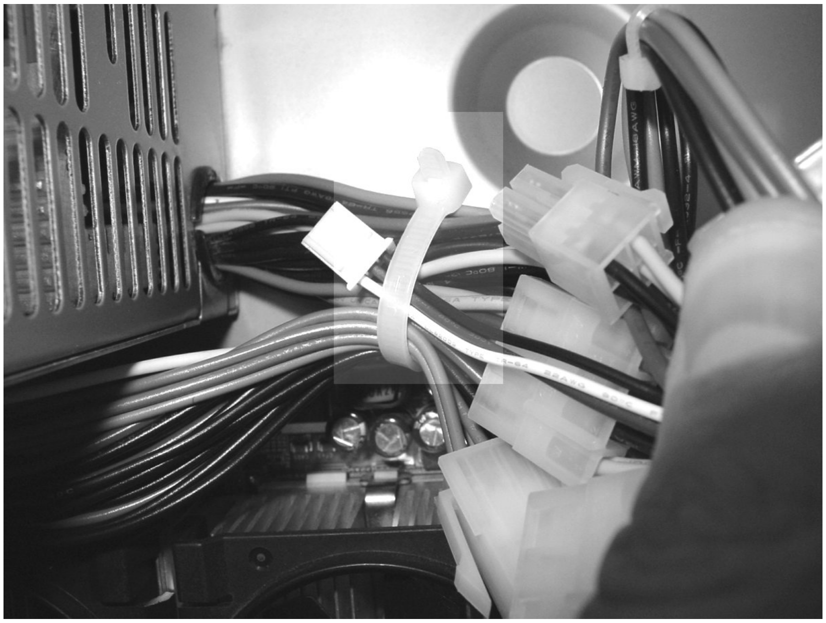
5. Carefully connect the hard drive power cable to the back of the hard drive.



6. Carefully connect the power cable to the back of the CD drive.



7. Use a wire tie to bind the power supply cable and the motherboard power cable extension together, as shown. Trim excess tie as required.



8. Securely tie any additional loose cabling, and trim excess tie, as required.

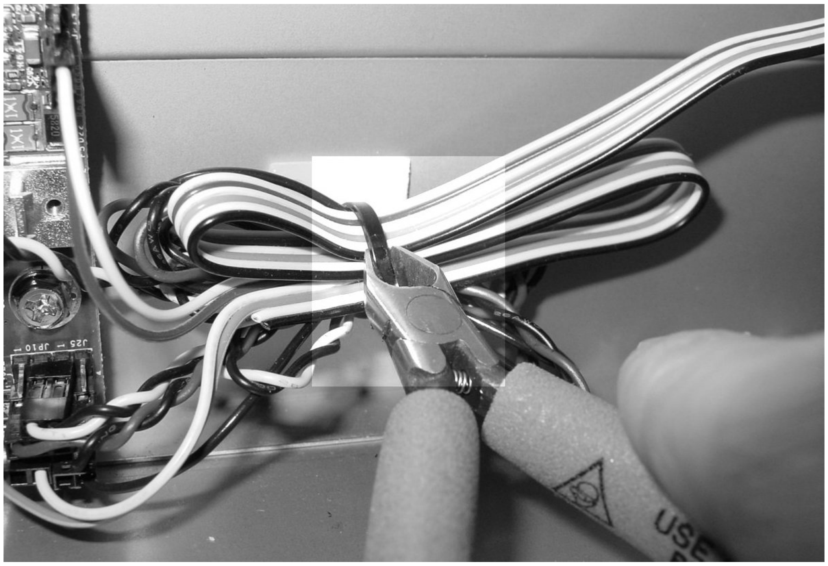
9. Complete "Side Panel Installation" on page 6-5.
10. If applicable, perform the "Electrical Safety Tests" on page 4-9.

Power Switch Removal/Installation

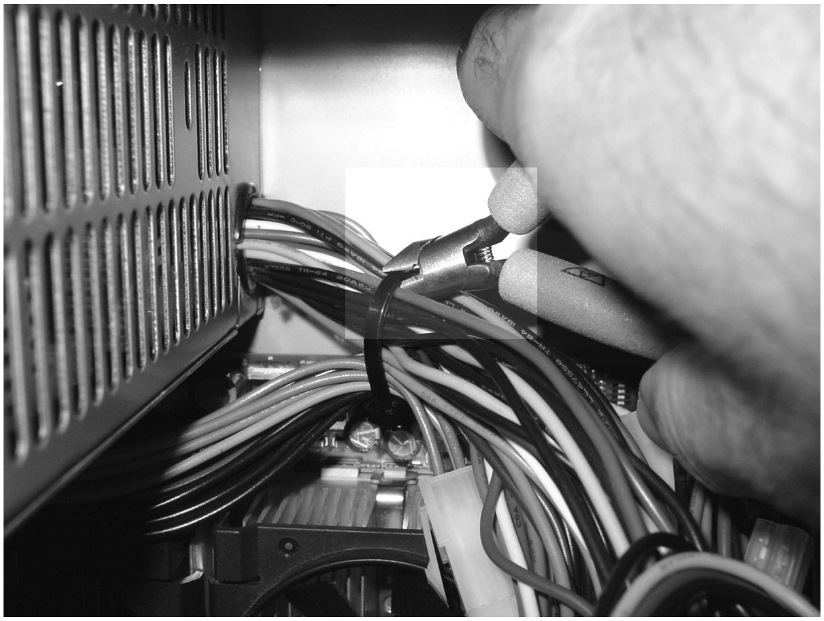
Power Supply FRU Kit No. 2017715-014

Power Switch Removal

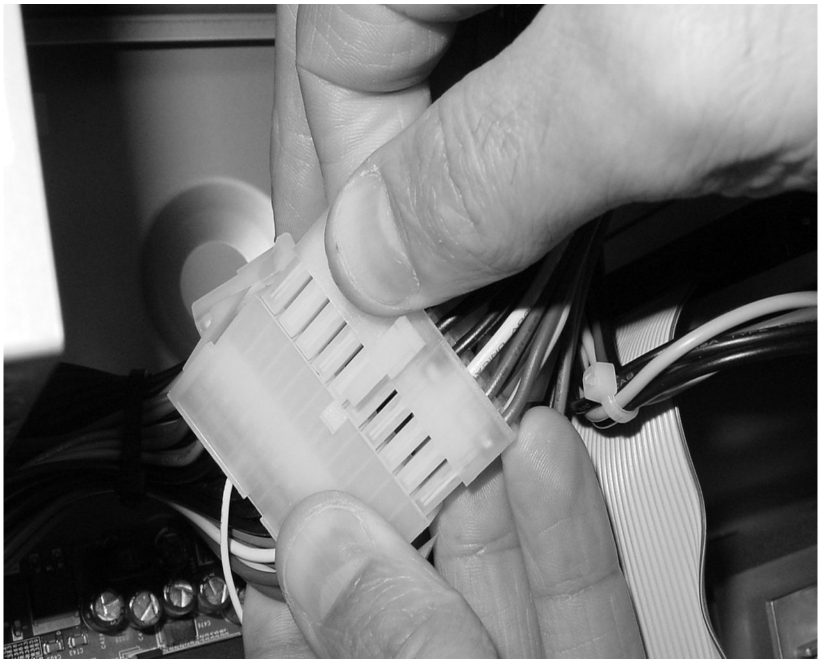
1. Complete "Field Replacement Preparation" on page 6-4.
2. Complete "Side Panel Removal" on page 6-5.
3. Complete "Front Bezel Removal" on page 6-6.
4. Cut the wire tie securing the power switch, LED, watchdog, and internal speaker wires to the chassis.



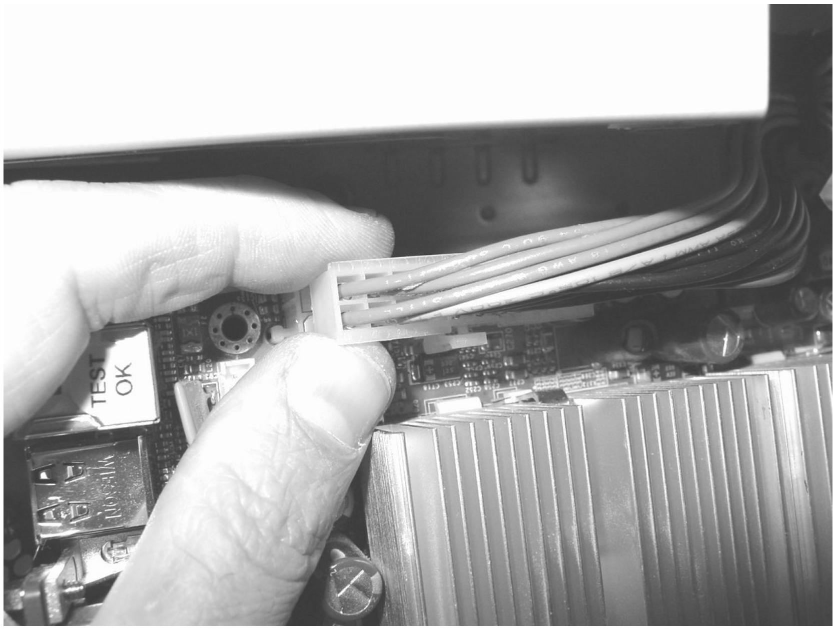
5. Cut the wire tie securing the power supply cable and the motherboard power cable extension.



6. Carefully disconnect the power supply cable from motherboard power cable extension.



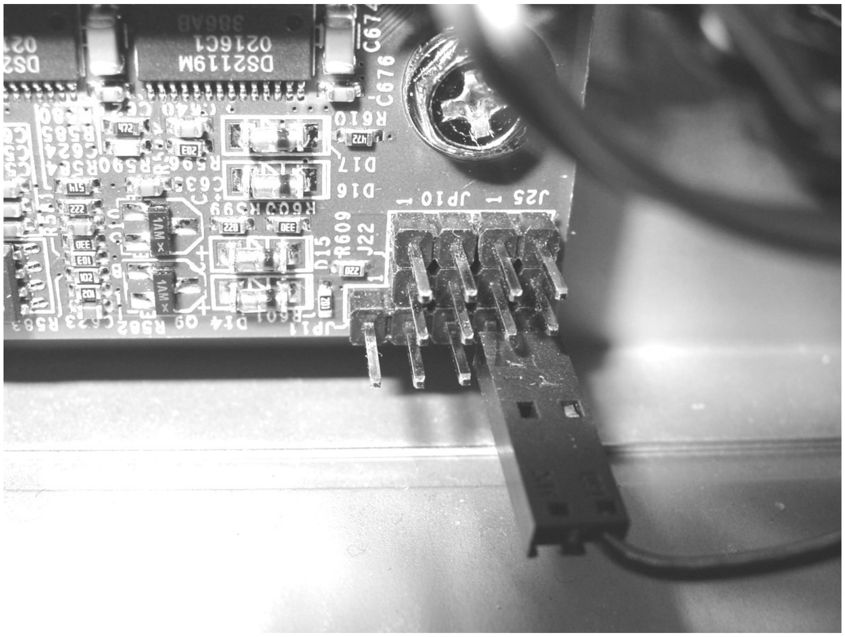
7. Carefully disconnect the motherboard power cable extension from the top of the motherboard.



8. Carefully disconnect the black connector at the bottom right corner of the motherboard.

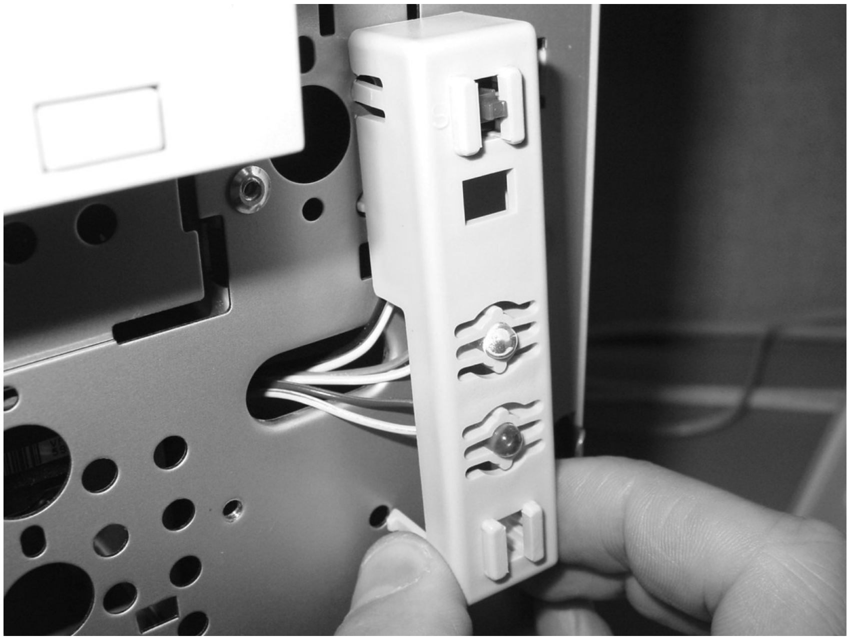
CAUTION

Do not remove any other connectors from the bottom right corner of the motherboard.

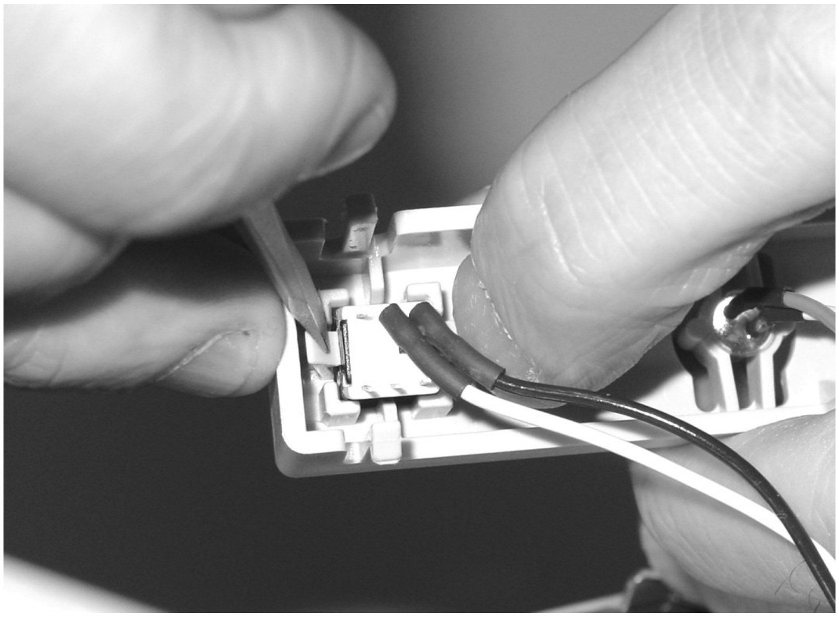


OTHER CONNECTORS REMOVED FOR CLARITY

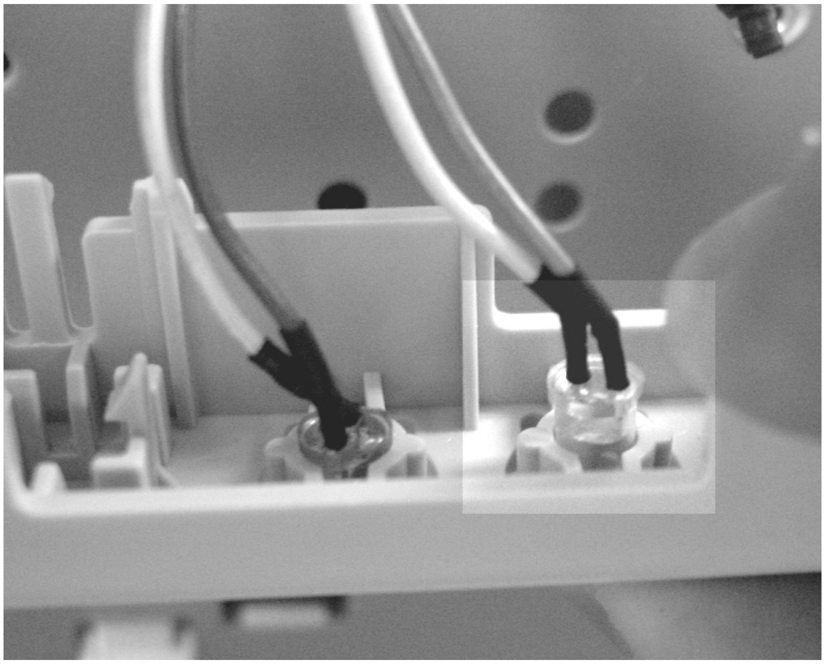
9. Squeeze the tabs on the power switch housing and remove the switch from the front of the chassis.



10. Using a fingernail and a screwdriver, pry apart the tabs securing the power switch in the power switch housing. Pull/push the switch out of the housing.



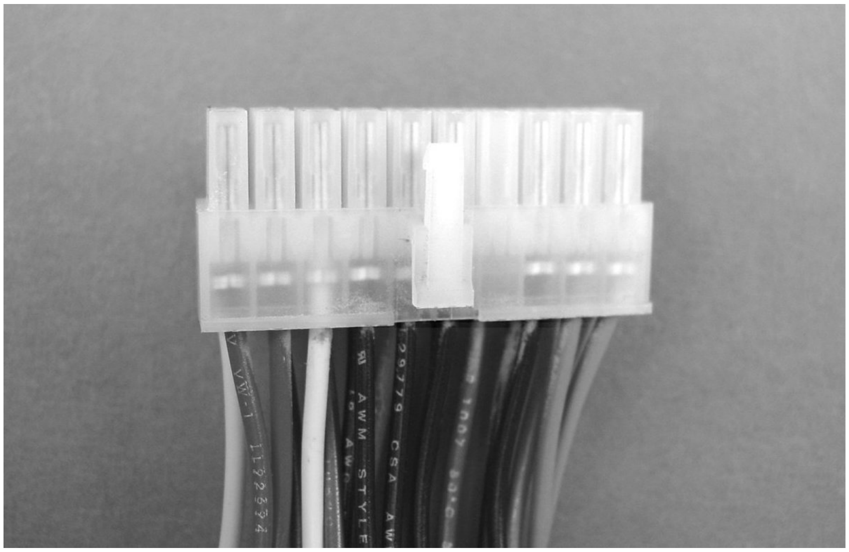
11. Push the white (TOP) and amber (BOTTOM) LEDs out of the back of the switch housing.



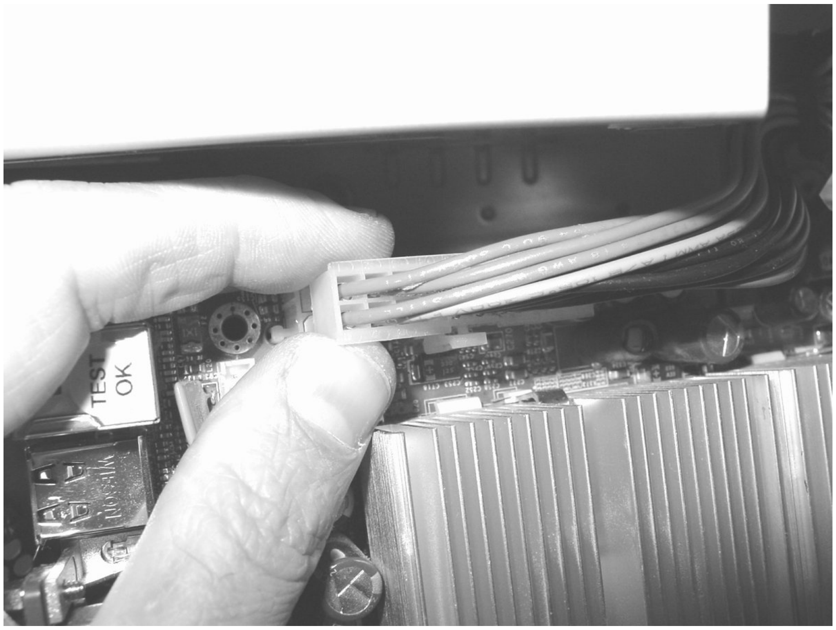
12. Carefully remove the motherboard power cable extension, the attached white wire/power switch/black wire assembly from the server.

Power Switch Installation

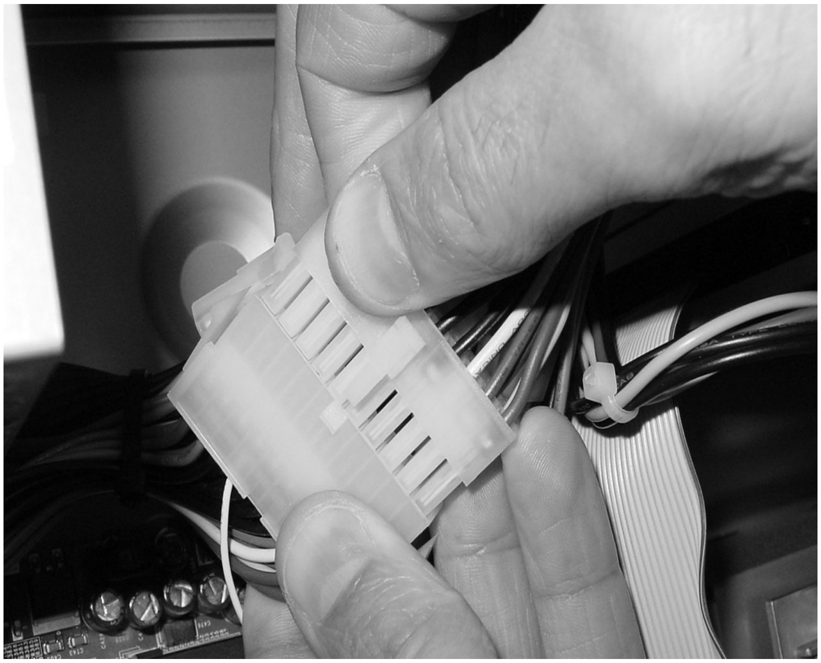
1. Identify the motherboard power connector on the switch/wire harness assembly included in the field replacement kit. The motherboard power connector is on the power cable extension portion of the assembly.



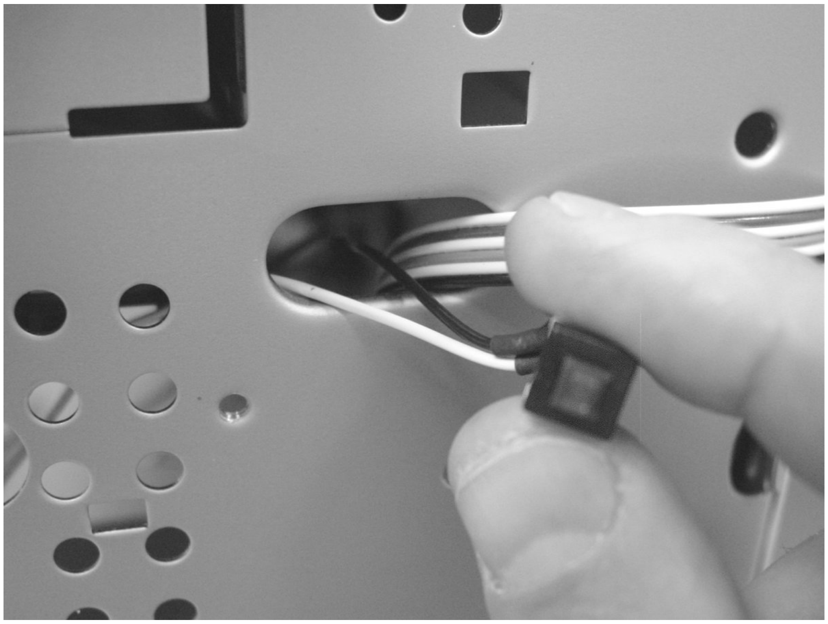
2. Carefully connect the motherboard power connector to the top of the motherboard.



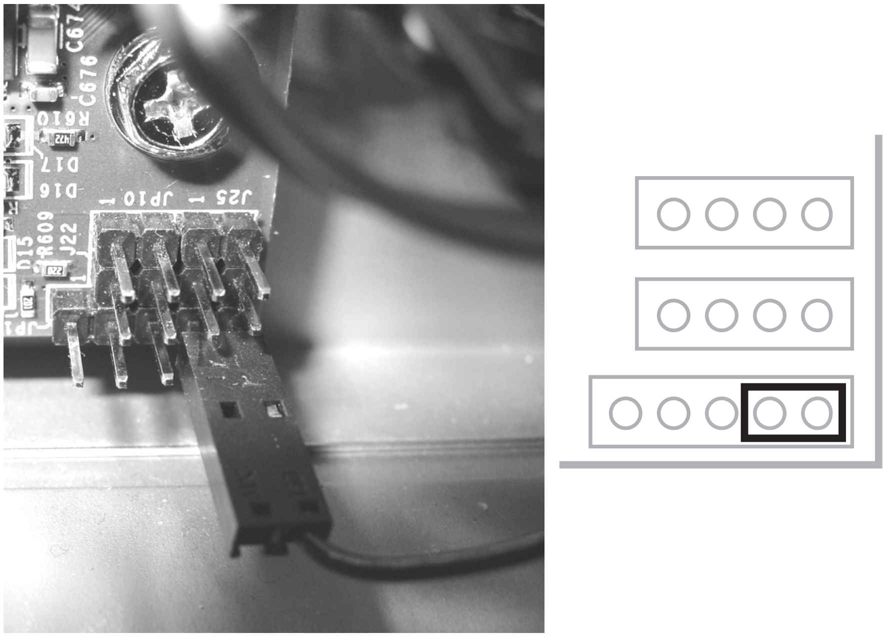
3. Carefully connect the other end of the motherboard power cable extension to the power supply cable.



4. Carefully route the attached power switch out through the front of the chassis as shown.



5. Route the black wire connected to the power switch along the LED ribbon cable to the bottom right corner of the motherboard. Carefully connect the black power switch connector to the connection block at the bottom right corner of the motherboard. Position the connector with the black lead to the right, as shown.

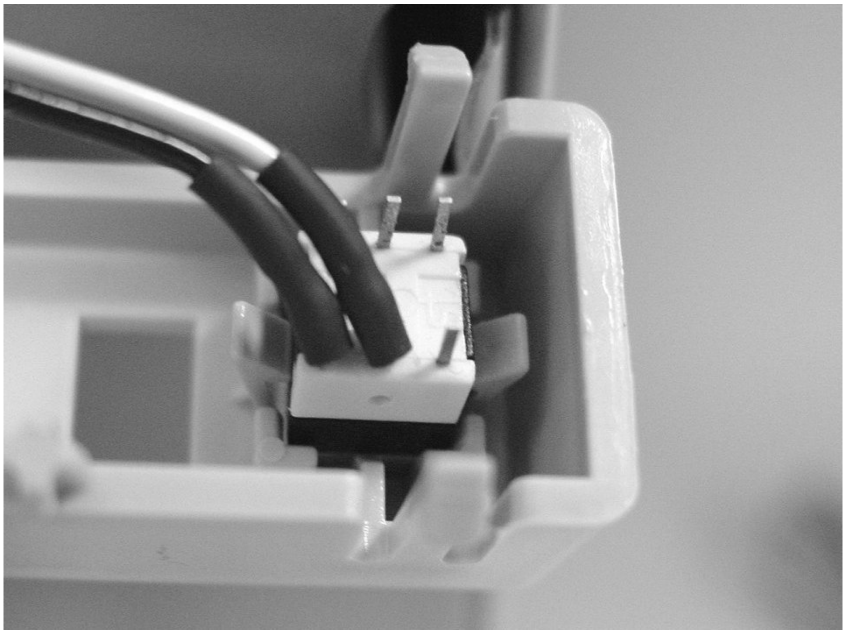


OTHER CONNECTORS REMOVED FOR CLARITY

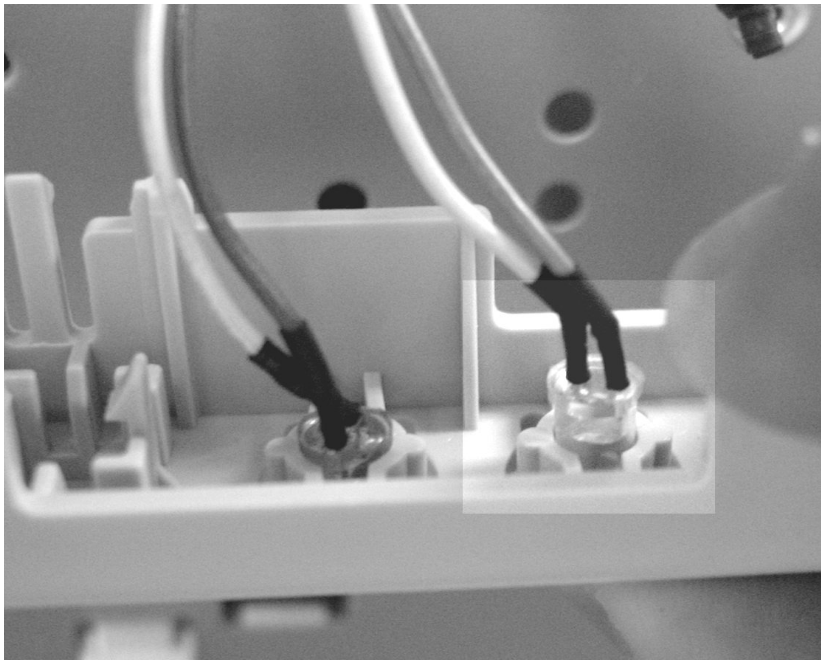
6. Push the new power switch into the back of the power switch housing until it snaps in place.

NOTE

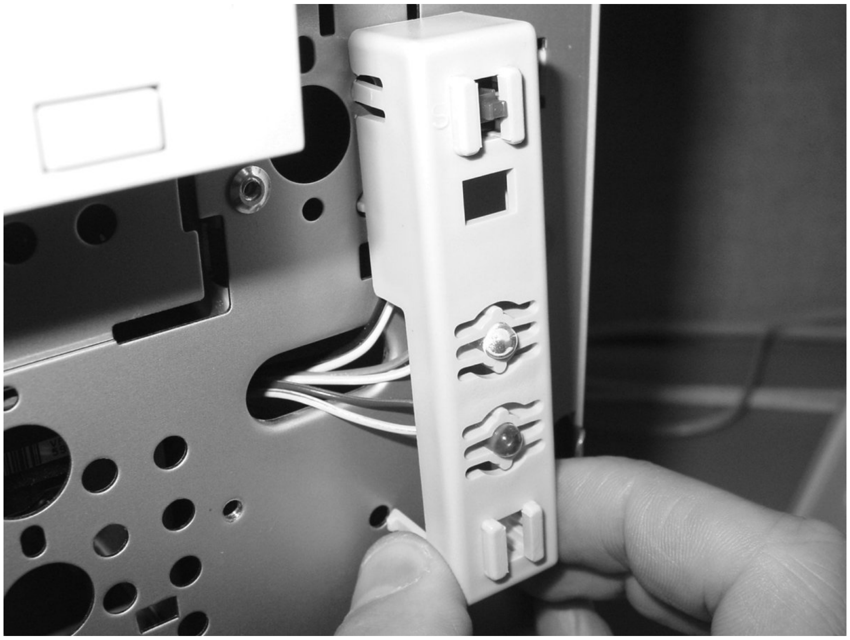
Snap the power switch into end of the housing farthest away from the LED sockets.



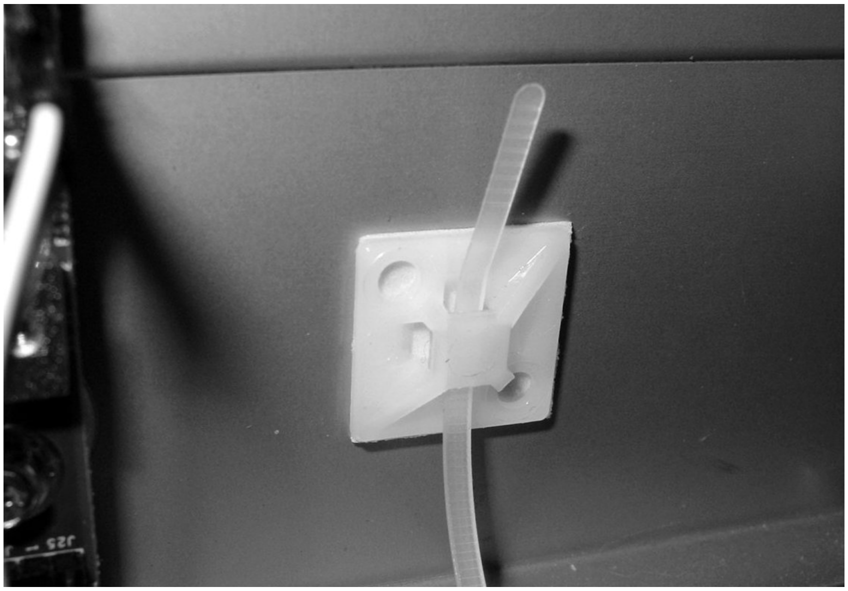
7. Push the white (TOP) and amber (BOTTOM) LEDs into of the back of the power switch housing.



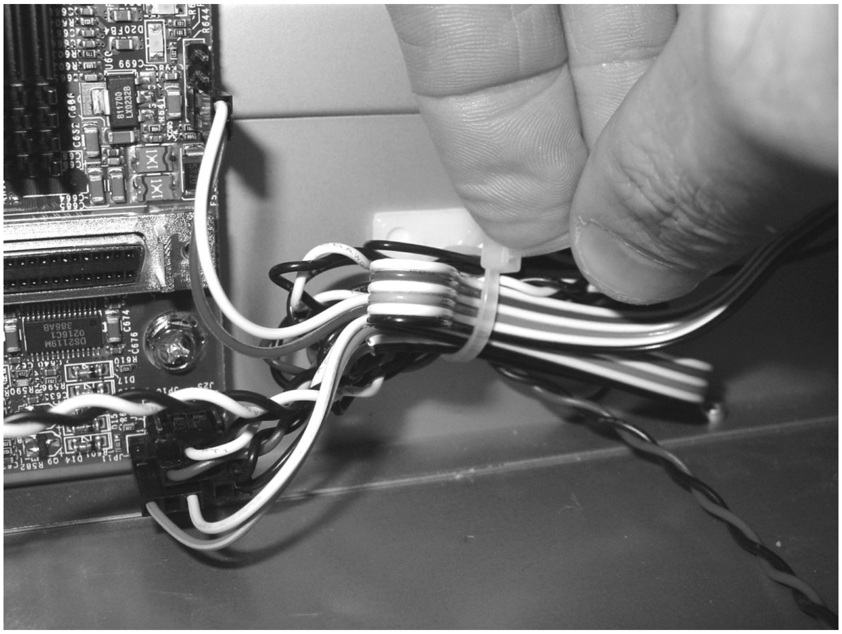
8. With the power switch positioned at the top, align the tabs on the power switch housing with the holes on the front of the chassis. Push the switch housing into the chassis until it snaps in place.



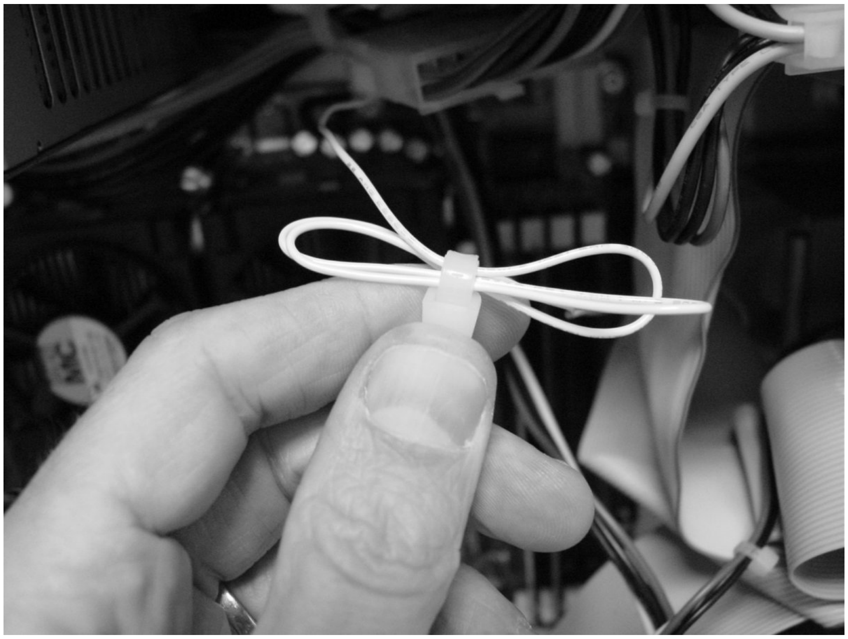
9. Thread a wire tie through the anchor point in the chassis, as shown.



10. Secure the power switch, LED, watchdog, and internal speaker wires to the chassis with the wire tie installed in the previous step, as shown. Trim any excess cable tie.



11. Tie the excess white power switch wire with a wire tie, as shown.



12. Complete “Front Bezel Installation” on page 6-6.
13. Complete “Side Panel Installation” on page 6-5.
14. If applicable, perform the “Electrical Safety Tests” on page 4-9.

7 Webmin Application

For your notes

Introduction

Webmin is an internet-based web application used for CIC Pro administration and service.

Webmin Access

It is possible to access/control the Webmin application on the CIC Pro computer remotely (using the CIC Pro computer itself), or remotely (using a separate computer connected to the CIC Pro computer through the Unity IX network) .

Local Webmin Access from the CIC Pro Computer

1. Click the *Browse* button in the upper right corner of the CIC Pro multiple patient viewer window.

NOTE

If there is no *Browse* button, or if the button is disabled, see “Browser Setup” on page 3-42.

2. Select *Favorites* > *LocalWebmin*.

Remote Webmin Access from a Networked Computer

NOTE

Remote Webmin connection occurs using the Unity IX network. Because of this, remote Webmin access is possible only if both the CIC Pro computer and the remote computer are connected to the Unity IX network.

1. Start the Internet Explorer application.
2. Type **http://[CIC Pro server IP address]:10000** into the *Address* field and press **Enter**.

   NOTE

   [CIC Pro server IP address] is the Unity Network IX IP address for the CIC Pro server.

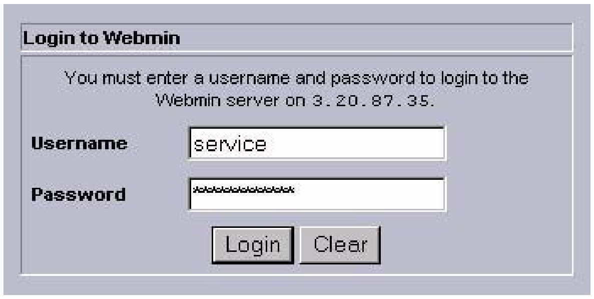
Webmin Login

Webmin login:

- *Username*: **service**
- *Password*: **salsa1,3,5,7** (default; your facility may have assigned a new password.)

NOTE

This password uses the number **1**, not the letter **l**.



Login to Webmin

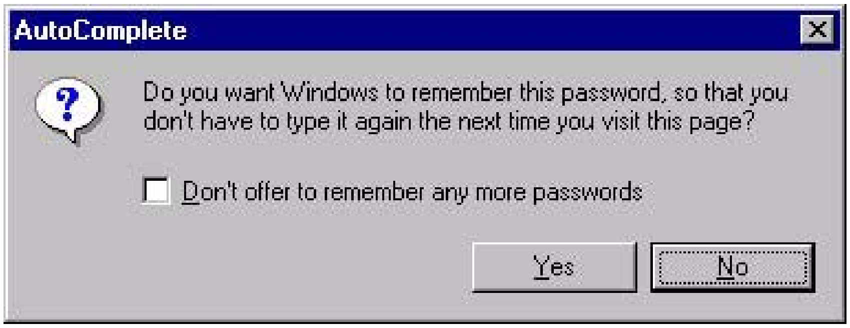
You must enter a username and password to login to the Webmin server on 3.20.87.35.

Username service

Password ************

NOTE

The *AutoComplete* window may display. Click *Yes* if you want the password automatically entered every time when logging in to Webmin. Click *No* if you want to continue manually entering the password.



AutoComplete

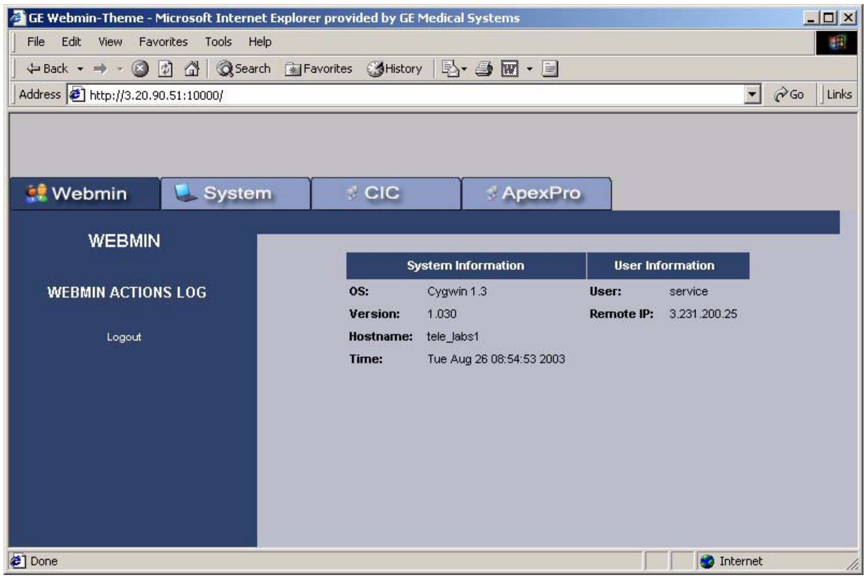
Do you want Windows to remember this password, so that you don't have to type it again the next time you visit this page?

☐ Don't offer to remember any more passwords

NOTE

Webmin features and functionality will vary depending upon your installation. For example, Webmin will not contain ApexPro support tools on systems that do not have ApexPro installed.

Webmin Tabs


GE Webmin-Theme - Microsoft Internet Explorer provided by GE Medical Systems
File Edit View Favorites Tools Help
Back
Search
Favorites
History
Address
Go
Links
Webmin
System
CIC
ApexPro
WEBMIN
WEBMIN ACTIONS LOG
Logout
Done
Internet

http://3.20.90.51:10000/

System Information		User Information	
OS:	Cygwin 1.3	**User:**	service
Version:	1.030	**Remote IP:**	3.231.200.25
Hostname:	tele_labs1		
Time:	Tue Aug 26 08:54:53 2003		

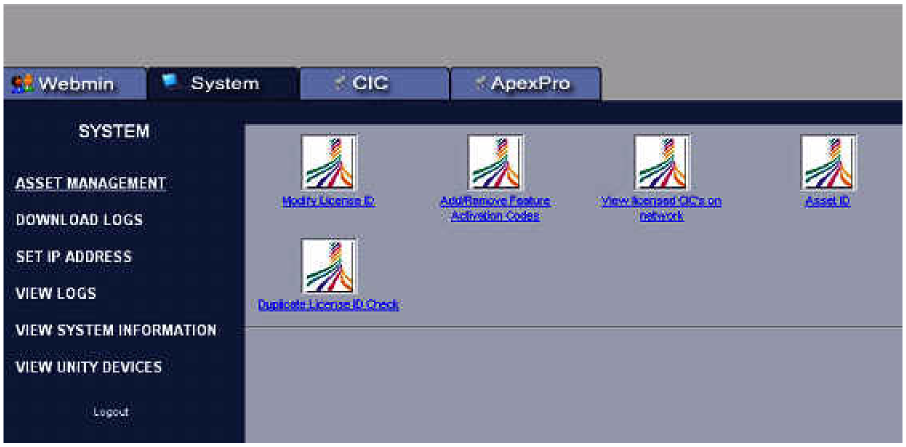
Webmin functionality is divided across a number of different tab screens. Refer to the following locations for more information about functionality associated with each screen:

- *Webmin* Tab, containing a *Logout* selection.
- "System Tab" on page 7-6.
- "CIC Tab", starting on page 7-19.
- "ApexPro Tab", starting on page 7-40.

System Tab

Overview

The following links are found on the *System* tab.


Webmin
System
CIC
ApexPro
SYSTEM
ASSET MANAGEMENT
DOWNLOAD LOGS
SET IP ADDRESS
VIEW LOGS
VIEW SYSTEM INFORMATION
VIEW UNITY DEVICES
Logout
Modify License ID
Add/Remove Feature Activation Codes
View licensed CIC's on network
Asset ID
Duplicate License ID Check

System Tab Links and Descriptions	
Link Name	**Description**
“Asset Management” on page 7-6	Allows management of feature licenses.
“Download Logs” on page 7-11.	Allows downloading of CIC Pro log files.
“Set IP Address” on page 7-13.	Displays CIC Pro computer environment variable information.
“View System Information” on page 7-15.	Allows viewing/configuration of Unity MC, ApexPro Host, and Unity IX IP addresses.
“View Logs” on page 7-16.	Displays a window allowing you to view log files.
“View Unity Devices” on page 7-17.	Displays information about devices communicating on the network.

Asset Management

General Information

The Asset Management link allows you to manage node-locked licensed features on the Unity Network. Some features, such as calipers, use a node-locked licensing system to restrict the use of a feature to one CIC Pro box. This system provides a method to activate and de-activate individual features. It is a completely separate licensing system from all existing licensing, such as FD licensing.

Each CIC Pro box is identified by a unique License ID. It is generated by manufacturing. Each License ID should only be used on one CIC Pro box. If no licensed features are enabled on a CIC Pro box, a License ID is not required.

Each node-locked feature license is identified by a unique Feature Activation Code. It is generated for a License ID for a specific CIC Pro box. To activate a feature, the

Feature Activation Code is entered on the CIC Pro with the corresponding License ID. If a feature is not activated, the button for that feature is not visible.

To ensure one License ID and Feature Activation Code combination is not replicated to more than one CIC Pro on the Unity Network, a License Manager running on each CIC Pro checks the Unity Network for duplicate License IDs every 60 minutes. If a duplicate License ID is found, two operations occur:

- The License Manager becomes visible on all CIC Pros marked with duplicate License IDs. A message indicating the affected CIC Pros with the duplicate License IDs is displayed.
- All features activated on the affected CIC Pros will be de-activated until the duplicate License ID situation is resolved.

Overview

To enable a node-locked feature licenses on a CIC Pro, follow this procedure.

1. Access the Webmin application according to “Webmin Access” on page 7-3.
2. Log in to Webmin according to “Webmin Login” on page 7-3.
3. Click the *System* tab.
4. Click the *Asset Management* link.
5. Configure the License ID, if none exists. See “Configuring License ID” on page 7-7.
6. Configure the Feature Activation Code. See “Configuring Feature Activation Codes” on page 7-9.
7. Check for duplicate License IDs. See “Checking for Duplicate License IDs” on page 7-8.
8. If duplicate License IDs exist, resolve them and recheck for duplicates. See “Resolving Duplicate License IDs” on page 7-9.

Managing License ID

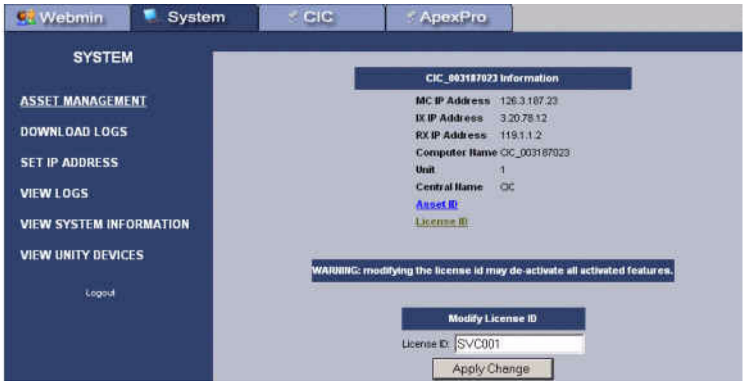
NOTE

> Modifying the License ID on this CIC Pro may de-activate all activated features if the currently installed Feature Activation Codes do not correspond with the new License ID.

Configuring License ID

To configure the License ID on a CIC Pro, follow this procedure.

1. Click the *Modify License ID* icon.


Webmin
System
CIC
ApexPro
SYSTEM
ASSET MANAGEMENT
DOWNLOAD LOGS
SET IP ADDRESS
VIEW LOGS
VIEW SYSTEM INFORMATION
VIEW UNITY DEVICES
Logout
Asset ID
License ID
Modify License ID
Apply Change

CIC_003187023 Information

MC IP Address 126.3.187.23
IX IP Address 3.20.78.12
RX IP Address 119.1.1.2
Computer Name CIC_003187023
Unit 1
Central Name CIC

WARNING: modifying the license id may de-activate all activated features.

License ID: SVC001

2. In the *License ID* text box, type the License ID and click ***Apply Change***.

Removing License ID

To remove the License ID on a CIC Pro, follow this procedure.

1. Remove all Feature Activation Codes enabled on the CIC Pro. See "Removing Feature Activation Codes" on page 7-10.
2. Click the *Asset Management* link.
3. Click the *Modify License ID* icon.
4. Verify the *License ID* text box is blank and click ***Apply Change***.

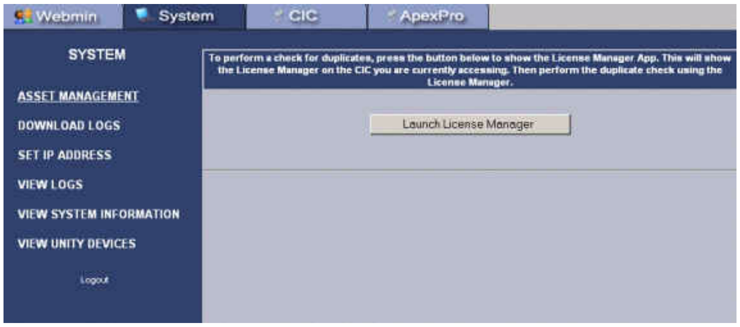
Checking for Duplicate License IDs

NOTE

This procedure must be preformed at the CIC Pro because the License Manager is only visible locally on the CIC Pro (not remotely via Webmin).

To check for duplicate License IDs on the Unity Network, follow this procedure.

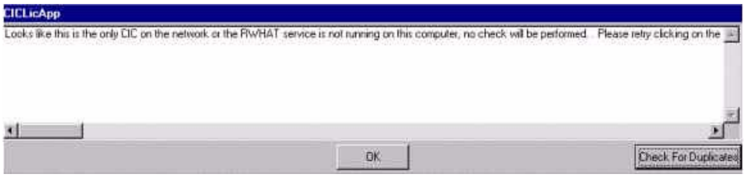
1. Click the *Asset Management* link.
2. Click the *Duplicate License ID Check* icon.


Webmin
System
CIC
ApexPro
SYSTEM
ASSET MANAGEMENT
DOWNLOAD LOGS
SET IP ADDRESS
VIEW LOGS
VIEW SYSTEM INFORMATION
VIEW UNITY DEVICES
Logout
Launch License Manager

To perform a check for duplicates, press the button below to show the License Manager App. This will show the License Manager on the CIC you are currently accessing. Then perform the duplicate check using the License Manager.

3. Click the *Launch License Manager* button. This will start the License Manager (CICLicApp) program.

4. Maximize the ClCLicApp program. The application can either be a popup window or an icon in the Windows task bar (near the *Start* menu).



Looks like this is the only CIC on the network or the RWHAT service is not running on this computer, no check will be performed . Please retry clicking on the

ClCLicApp
OK
Check For Duplicates

5. Click the *Check For Duplicates* button.

   If no duplicate License IDs are found, the feature(s) are ready for use of this CIC Pro.

   If duplicate License IDs are found, note the duplicates and resolve them. See "Resolving Duplicate License IDs" on page 7-9.

Resolving Duplicate License IDs

To resolve duplicate License IDs, follow this procedure for each duplicate CIC Pro.

1. "Removing Feature Activation Codes" on page 7-10.
2. "Configuring License ID" on page 7-7.
3. "Configuring Feature Activation Codes" on page 7-9.
4. "Checking for Duplicate License IDs" on page 7-8.

   NOTE

   If the duplicate check is not performed on each affected CIC Pro, features will not be activated on that CIC Pro until its License Manager runs the periodic duplicate check (up to 60 minutes later).

Managing Feature Activation Codes

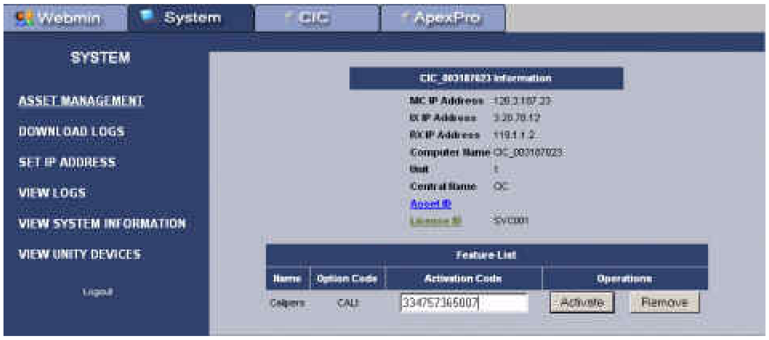
NOTE

The License ID must be defined for the CIC Pro to enable Feature Activation Codes.

Configuring Feature Activation Codes

To configure a Feature Activation Code on a CIC Pro, follow this procedure.

1. Click the *Asset Management* link.
2. Click the *Add/Remove Feature Activation Code* icon.



Name	Option Code	Activation Code	Operations
Calipers	CALI	334757365007	Activate Remove

Webmin
System
CIC
ApexPro
SYSTEM
ASSET MANAGEMENT
DOWNLOAD LOGS
SET IP ADDRESS
VIEW LOGS
VIEW SYSTEM INFORMATION
VIEW UNITY DEVICES
Logout
MC IP Address
Computer Name
Unit
Central Name
Asset ID
License ID
Feature List

3. In the *Activation Code* text box, type the Feature Activation Code and click ***Activate***.

   If the activation is successful, the message "*The activation code has been applied*" displays on the top of this screen.

Verifying Feature Activation Codes

To verify that a Feature Activation Code is enabled on a CIC Pro, follow this procedure.

1. Click the *Asset Management* link.
2. Click the *Add/Remove Feature Activation Code* icon.
3. Do NOT modify the Feature Activation Code.
4. Click ***Activate***.

   If the activation is successful, the message "*The activation code has been applied*" displays on the top of this screen.

Removing Feature Activation Codes

To remove a Feature Activation Code from a CIC Pro, follow this procedure.

1. Click the *Asset Management* link.
2. Click the *Add/Remove Feature Activation Code* icon.
3. Locate the feature and click ***Remove***.

   NOTE

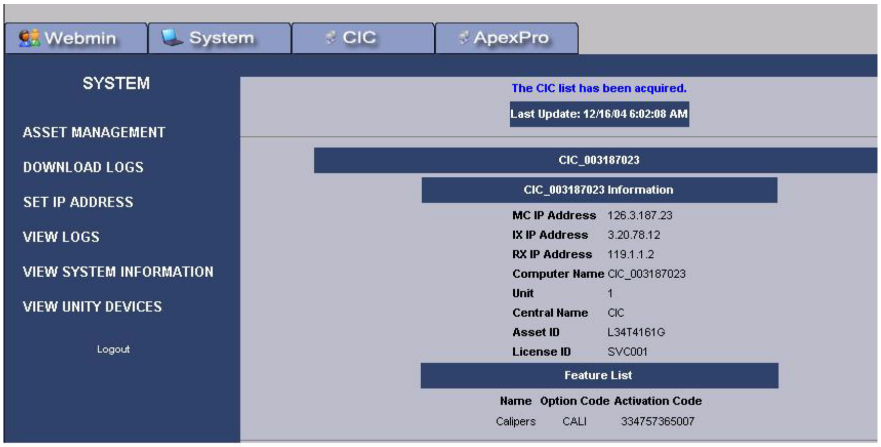
   Removing a Feature Activation Code de-actives the feature on the CIC Pro.

Viewing Licensed CIC Pros

In addition to looking for duplicate License IDs, the License Manager also trades important CIC Pro information across the Unity Network. This information is cached every 60 minutes or whenever a duplicate check is performed. A time stamp indicates the report creation time.

To view the cached licensed CIC Pro information, follow this procedure.

1. Click the *Asset Management* link.
2. Click the *View Licensed CICs on Network* icon.


Webmin
System
CIC
ApexPro
SYSTEM
ASSET MANAGEMENT
DOWNLOAD LOGS
SET IP ADDRESS
VIEW LOGS
VIEW SYSTEM INFORMATION
VIEW UNITY DEVICES
Logout

The CIC list has been acquired.

Last Update: 12/16/04 6:02:08 AM

CIC_003187023

CIC_003187023 Information

MC IP Address 126.3.187.23
IX IP Address 3.20.78.12
RX IP Address 119.1.1.2
Computer Name CIC_003187023
Unit 1
Central Name CIC
Asset ID L34T4161G
License ID SVC001

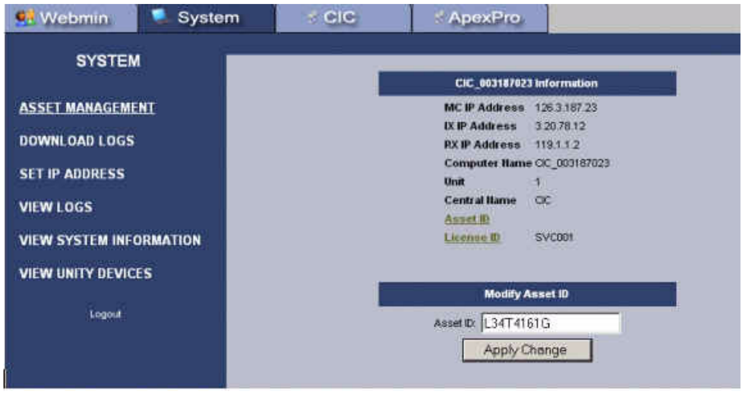
Feature List

Name	Option Code	Activation Code
Calipers	CALI	334757365007

Managing Asset IDs

Hospitals may wish to label CIC Pros with their own identification. To define a label for a CIC Pro, follow this procedure.

1. Click the *Asset Management* link.
2. Click the *Asset ID* icon.


Webmin
System
CIC
ApexPro
SYSTEM
ASSET MANAGEMENT
DOWNLOAD LOGS
SET IP ADDRESS
VIEW LOGS
VIEW SYSTEM INFORMATION
VIEW UNITY DEVICES
Logout
Apply Change

CIC_003187023 Information

MC IP Address 126.3.187.23
IX IP Address 3.20.78.12
RX IP Address 119.1.1.2
Computer Name CIC_003187023
Unit 1
Central Name CIC
Asset ID
License ID SVC001

Modify Asset ID

Asset ID: L34T4161G

3. In the *Asset ID* text box, type a unique identifier (up to 63 characters).
4. Click ***Apply Change***.

   If the change is successful, the message “*The asset ID has been set to ...*” displays on the top of this screen.

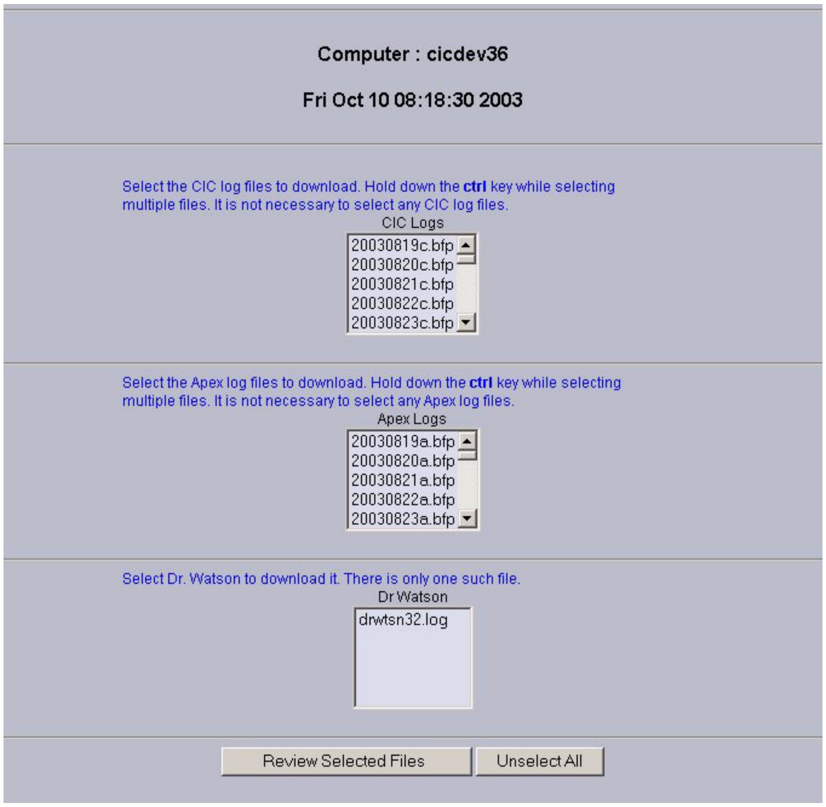
Download Logs

1. Access the Webmin application according to “Remote Webmin Access from a Networked Computer” on page 7-3.

   NOTE

   The *Download Logs* window only works when connecting from a networked, remote computer. It will not work locally at CIC Pro Webmin computer.

2. Log in to Webmin according to "Webmin Login" on page 7-3.
3. Click the *System* tab.
4. Click the *Download Logs* link. The following window displays:



Computer : cicdev36

Fri Oct 10 08:18:30 2003

Select the CIC log files to download. Hold down the **ctrl** key while selecting multiple files. It is not necessary to select any CIC log files.

CIC Logs

20030819c.bfp
20030820c.bfp
20030821c.bfp
20030822c.bfp
20030823c.bfp

Select the Apex log files to download. Hold down the **ctrl** key while selecting multiple files. It is not necessary to select any Apex log files.

Apex Logs

20030819a.bfp
20030820a.bfp
20030821a.bfp
20030822a.bfp
20030823a.bfp

Select Dr. Watson to download it. There is only one such file.

Dr Watson

drwtsn32.log

This window allows you to download CIC Pro, Apex Pro and Windows Dr. Watson log files. Select the log files you want to download from the lists, and click *Preview Selected Files.*

To download log files:

NOTE

At the end of each day, log files are compressed into *.bfp* files. Log files for the current day are uncompressed and cannot be downloaded. To view current day log files, see "View Logs" on page 7-16.

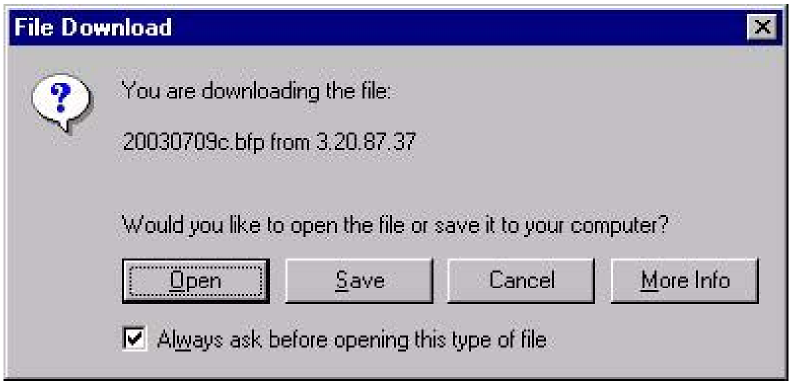
1. Click to select the logs you want to download. Click *Unselect All* to deselect selected logs.

   NOTE

   Ctrl + click to select multiple items from the lists.

2. Click *Review Selected Files*. A new window containing links for downloading the selected logs displays.

3. Click a log you want to download. The *File Download* window displays.



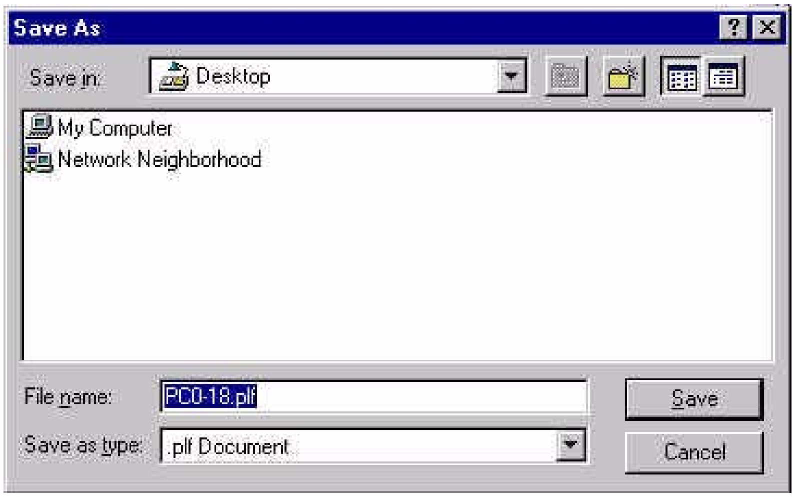
You are downloading the file:

20030709c.bfp from 3.20.87.37

Would you like to open the file or save it to your computer?

File Download
Open
Save
Cancel
More Info
☑ Always ask before opening this type of file

4. Click *Save*. The *Save As* window displays.



Save in: Desktop

File name: PC0-18.plf

Save as type: .plf Document

Save As
My Computer
Network Neighborhood
Save
Cancel

5. Navigate to a location to save the log, and type a name for the logs, or accept the default. Click *Save*.

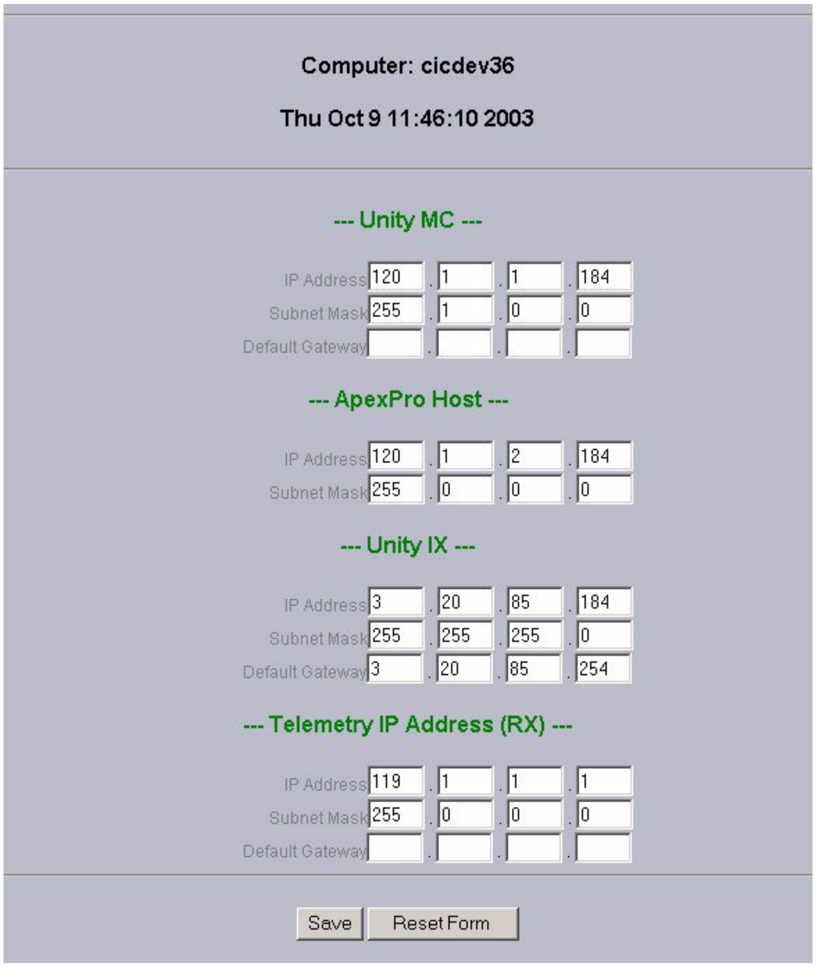
NOTE

> Saved logs files with the extension ".bfp" are compressed files. To uncompress these files, change the ".bfp" extension to ".zip", and open the renamed file using a ZIP file utility, such as PKZIP.

Set IP Address

1. Access the Webmin application according to "Webmin Access" on page 7-3.
2. Log in to Webmin according to "Webmin Login" on page 7-3.
3. Click the *System* tab.

4. Click the *Set IP Address* link. The following window displays:



Computer: cicdev36

Thu Oct 9 11:46:10 2003

--- Unity MC ---

IP Address 120 . 1 . 1 . 184
Subnet Mask 255 . 1 . 0 . 0
Default Gateway . . .

--- ApexPro Host ---

IP Address 120 . 1 . 2 . 184
Subnet Mask 255 . 0 . 0 . 0

--- Unity IX ---

IP Address 3 . 20 . 85 . 184
Subnet Mask 255 . 255 . 255 . 0
Default Gateway 3 . 20 . 85 . 254

--- Telemetry IP Address (RX) ---

IP Address 119 . 1 . 1 . 1
Subnet Mask 255 . 0 . 0 . 0
Default Gateway . . .

NOTE

The ApexPro Host and Telemetry IP Address (RX) IP setting have no effect for CIC Pros not equipped with the ApexPro option.

This window displays current IP address, subnet mask, and default gateway settings for Unity MC, ApexPro Host, Unity IX and Telemetry IP Address (RX). It also allows you to change the settings.

For information about IP address configuration, see “IP Address Configuration” on page 3-44.

To change IP address, subnet mask and/or default gateway settings:

NOTE

For more detailed IP address configuration information, see “IP Address Configuration” on page 3-44.

CAUTION

Duplicate IP addresses will cause erratic communication and data loss! Be extremely careful not to assign the same IP address to two different devices.

---

1. Select the settings you want to change, and type in the new values. To cancel your changes, click *Reset Form*.

NOTE

Reset Form effects the displayed settings only, it does not effect the actual IP address settings themselves.

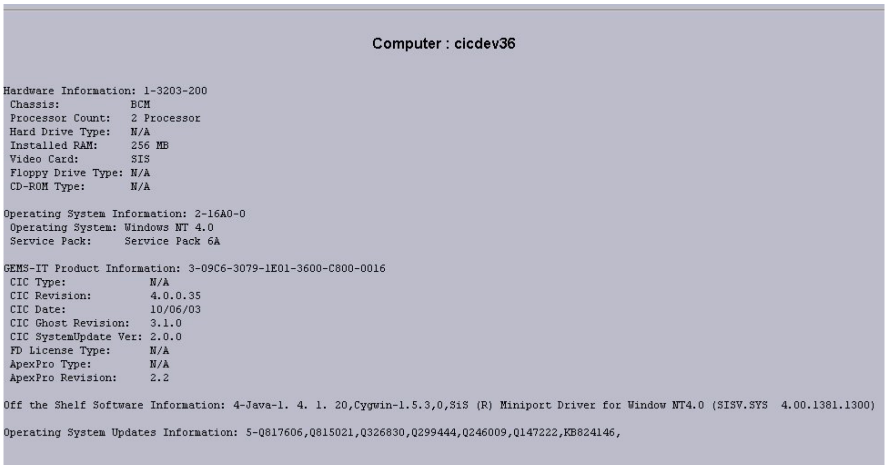
2. Click *Save* to save the new settings.

NOTE

You must restart the CIC Pro server for the new IP Address settings to take effect.

View System Information

1. Access the Webmin application according to “Webmin Access” on page 7-3.
2. Log in to Webmin according to “Webmin Login” on page 7-3.
3. Click the *System* tab.
4. Click the *View System Information* link. The following windows displays, containing hardware and software information specific to the CIC Pro computer on which the Webmin application is located:

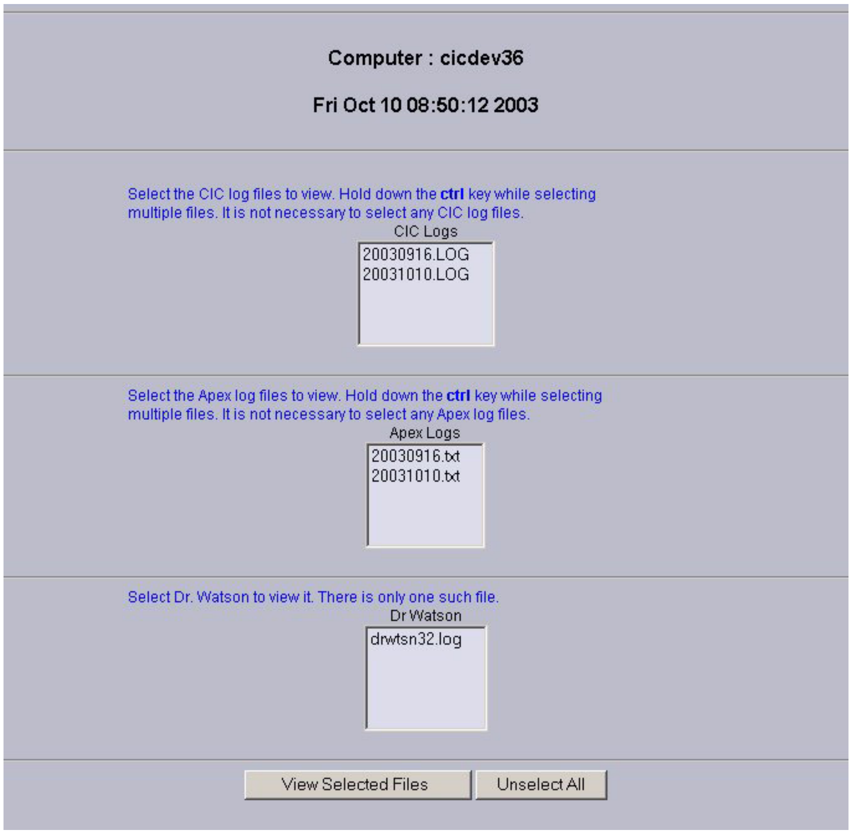


Computer : cicdev36

```
Hardware Information: 1-3203-200
 Chassis:            BCM
 Processor Count:    2 Processor
 Hard Drive Type:    N/A
 Installed RAM:      256 MB
 Video Card:         SIS
 Floppy Drive Type:  N/A
 CD-ROM Type:        N/A

Operating System Information: 2-16A0-0
 Operating System: Windows NT 4.0
 Service Pack:     Service Pack 6A

GEMS-IT Product Information: 3-09C6-3079-1E01-3600-C800-0016
 CIC Type:              N/A
 CIC Revision:          4.0.0.35
 CIC Date:              10/06/03
 CIC Ghost Revision:    3.1.0
 CIC SystemUpdate Ver:  2.0.0
 FD License Type:       N/A
 ApexPro Type:          N/A
 ApexPro Revision:      2.2

Off the Shelf Software Information: 4-Java-1. 4. 1. 20,Cygwin-1.5.3,0,SiS (R) Miniport Driver for Window NT4.0 (SISV.SYS  4.00.1381.1300)

Operating System Updates Information: 5-Q817606,Q815021,Q326830,Q299444,Q246009,Q147222,KB824146,
```

View Logs

1. Access the Webmin application according to "Webmin Access" on page 7-3.
2. Log in to Webmin according to "Webmin Login" on page 7-3.
3. Click the *System* tab.
4. Click the *View Logs* link. The following window displays:



Computer : cicdev36

Fri Oct 10 08:50:12 2003

Select the CIC log files to view. Hold down the **ctrl** key while selecting multiple files. It is not necessary to select any CIC log files.

CIC Logs

20030916.LOG
20031010.LOG

Select the Apex log files to view. Hold down the **ctrl** key while selecting multiple files. It is not necessary to select any Apex log files.

Apex Logs

20030916.txt
20031010.txt

Select Dr. Watson to view it. There is only one such file.

Dr Watson

drwtsn32.log

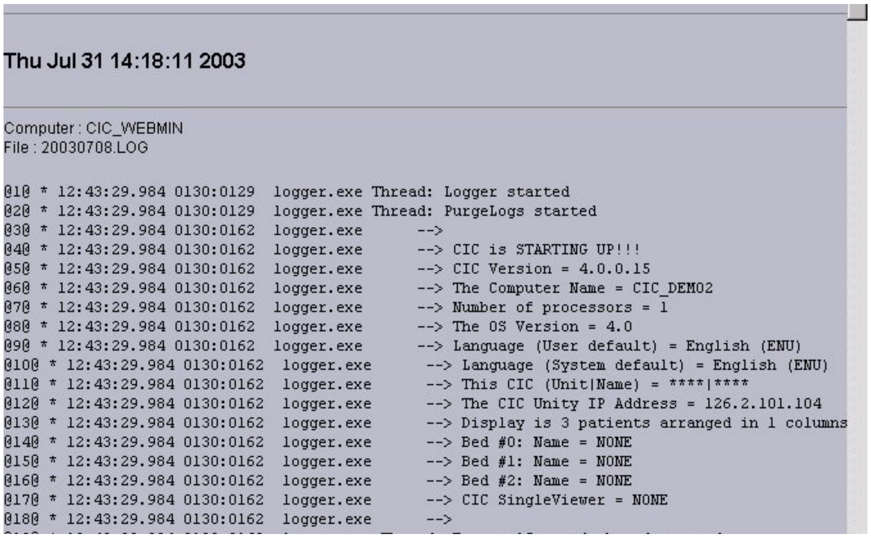
Use this window to view CIC Pro, Apex Pro and Windows Dr. Watson log files, as follows:

1. Select the log files you want to view from the *CIC Logs* and/or *Apex Logs* lists. Click *Unselect All* to deselect selected files.

   NOTE

   Ctrl + click to select multiple items from the lists.

2. Click *View Selected Files*. The selected log files display.



Thu Jul 31 14:18:11 2003

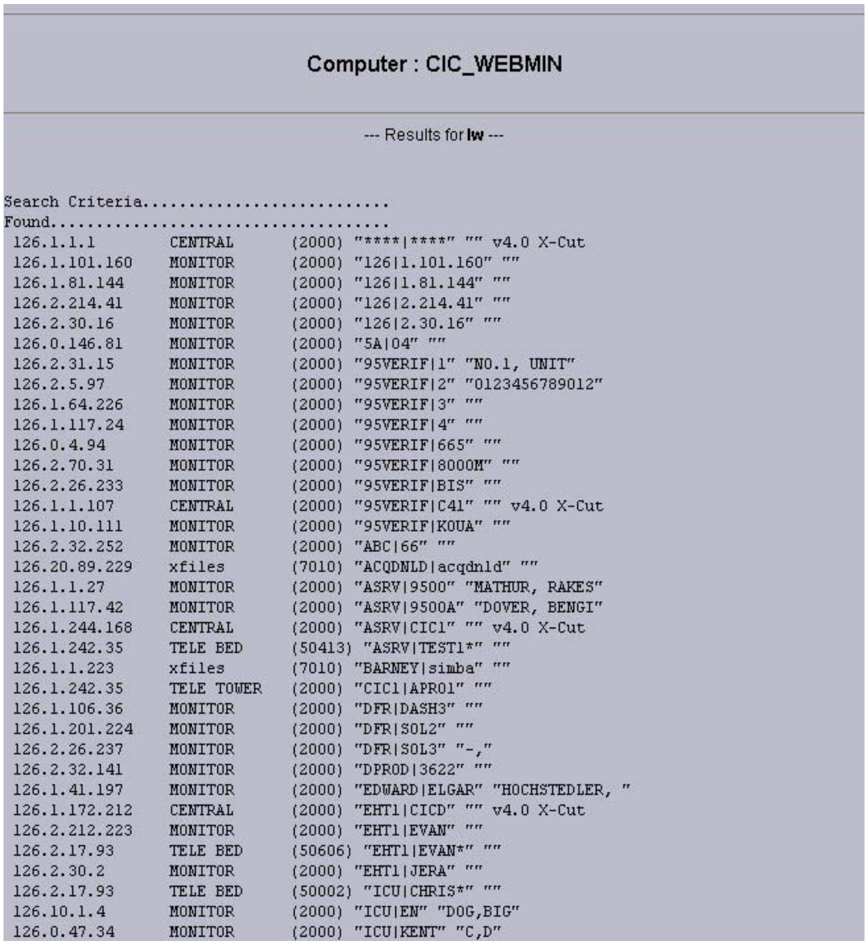
Computer : CIC_WEBMIN
File : 20030708.LOG

```
@1@ * 12:43:29.984 0130:0129  logger.exe Thread: Logger started
@2@ * 12:43:29.984 0130:0129  logger.exe Thread: PurgeLogs started
@3@ * 12:43:29.984 0130:0162  logger.exe      -->
@4@ * 12:43:29.984 0130:0162  logger.exe      --> CIC is STARTING UP!!!
@5@ * 12:43:29.984 0130:0162  logger.exe      --> CIC Version = 4.0.0.15
@6@ * 12:43:29.984 0130:0162  logger.exe      --> The Computer Name = CIC_DEMO2
@7@ * 12:43:29.984 0130:0162  logger.exe      --> Number of processors = 1
@8@ * 12:43:29.984 0130:0162  logger.exe      --> The OS Version = 4.0
@9@ * 12:43:29.984 0130:0162  logger.exe      --> Language (User default) = English (ENU)
@10@ * 12:43:29.984 0130:0162  logger.exe      --> Language (System default) = English (ENU)
@11@ * 12:43:29.984 0130:0162  logger.exe      --> This CIC (Unit|Name) = ****|****
@12@ * 12:43:29.984 0130:0162  logger.exe      --> The CIC Unity IP Address = 126.2.101.104
@13@ * 12:43:29.984 0130:0162  logger.exe      --> Display is 3 patients arranged in 1 columns
@14@ * 12:43:29.984 0130:0162  logger.exe      --> Bed #0: Name = NONE
@15@ * 12:43:29.984 0130:0162  logger.exe      --> Bed #1: Name = NONE
@16@ * 12:43:29.984 0130:0162  logger.exe      --> Bed #2: Name = NONE
@17@ * 12:43:29.984 0130:0162  logger.exe      --> CIC SingleViewer = NONE
@18@ * 12:43:29.984 0130:0162  logger.exe      -->
```

View Unity Devices

1. Access the Webmin application according to “Webmin Access” on page 7-3.
2. Log in to Webmin according to “Webmin Login” on page 7-3.
3. Click the *System* tab.

4. Click the *View Unity Devices* link. The following window containing network device information displays:



Computer : CIC_WEBMIN

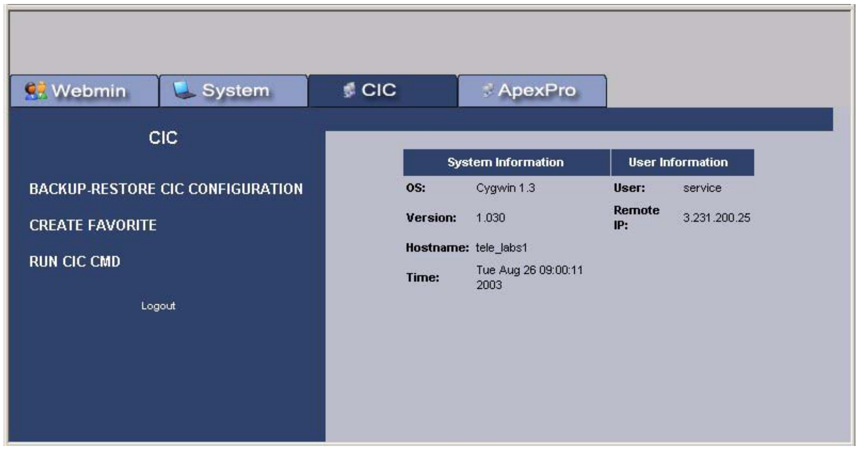
--- Results for **lw** ---

```
Search Criteria..........................
Found....................................
 126.1.1.1        CENTRAL      (2000) "****|****" "" v4.0 X-Cut
 126.1.101.160    MONITOR      (2000) "126|1.101.160" ""
 126.1.81.144     MONITOR      (2000) "126|1.81.144" ""
 126.2.214.41     MONITOR      (2000) "126|2.214.41" ""
 126.2.30.16      MONITOR      (2000) "126|2.30.16" ""
 126.0.146.81     MONITOR      (2000) "5A|04" ""
 126.2.31.15      MONITOR      (2000) "95VERIF|1" "NO.1, UNIT"
 126.2.5.97       MONITOR      (2000) "95VERIF|2" "0123456789012"
 126.1.64.226     MONITOR      (2000) "95VERIF|3" ""
 126.1.117.24     MONITOR      (2000) "95VERIF|4" ""
 126.0.4.94       MONITOR      (2000) "95VERIF|665" ""
 126.2.70.31      MONITOR      (2000) "95VERIF|8000M" ""
 126.2.26.233     MONITOR      (2000) "95VERIF|BIS" ""
 126.1.1.107      CENTRAL      (2000) "95VERIF|C41" "" v4.0 X-Cut
 126.1.10.111     MONITOR      (2000) "95VERIF|KOUA" ""
 126.2.32.252     MONITOR      (2000) "ABC|66" ""
 126.20.89.229    xfiles       (7010) "ACQDNLD|acqdnld" ""
 126.1.1.27       MONITOR      (2000) "ASRV|9500" "MATHUR, RAKES"
 126.1.117.42     MONITOR      (2000) "ASRV|9500A" "DOVER, BENGI"
 126.1.244.168    CENTRAL      (2000) "ASRV|CIC1" "" v4.0 X-Cut
 126.1.242.35     TELE BED     (50413) "ASRV|TEST1*" ""
 126.1.1.223      xfiles       (7010) "BARNEY|simba" ""
 126.1.242.35     TELE TOWER   (2000) "CIC1|APR01" ""
 126.1.106.36     MONITOR      (2000) "DFR|DASH3" ""
 126.1.201.224    MONITOR      (2000) "DFR|SOL2" ""
 126.2.26.237     MONITOR      (2000) "DFR|SOL3" "-,"
 126.2.32.141     MONITOR      (2000) "DPROD|3622" ""
 126.1.41.197     MONITOR      (2000) "EDWARD|ELGAR" "HOCHSTEDLER, "
 126.1.172.212    CENTRAL      (2000) "EHT1|CICD" "" v4.0 X-Cut
 126.2.212.223    MONITOR      (2000) "EHT1|EVAN" ""
 126.2.17.93      TELE BED     (50606) "EHT1|EVAN*" ""
 126.2.30.2       MONITOR      (2000) "EHT1|JERA" ""
 126.2.17.93      TELE BED     (50002) "ICU|CHRIS*" ""
 126.10.1.4       MONITOR      (2000) "ICU|EN" "DOG,BIG"
 126.0.47.34      MONITOR      (2000) "ICU|KENT" "C,D"
```

The information displayed includes a list and summary of all devices communicating over the same network as the CIC Pro. This is identical to typing **lw** into a Windows Command Prompt from within CIC Pro and pressing **Return**.

See “List Network” on page 8-24.

CIC Tab


Webmin
System
CIC
ApexPro
CIC
BACKUP-RESTORE CIC CONFIGURATION
CREATE FAVORITE
RUN CIC CMD
Logout

System Information		User Information	
OS:	Cygwin 1.3	User:	service
Version:	1.030	Remote IP:	3.231.200.25
Hostname:	tele_labs1		
Time:	Tue Aug 26 09:00:11 2003		

The following links are found on the *CIC* tab screen.

CIC Pro Application Page Links and Descriptions

Link Name	Description
"Backup-Restore CIC Configuration" on page 7-20.	Click *Backup-Restore CIC Configuration* to display a window which allows you to backup and restore certain tools, data files and list files.
"Create Favorite" on page 7-36.	Clicking *Create Favorite* allows you to add favorites to the CIC Pro server browser favorites menu.
"Run CIC Cmd" on page 7-38.	Clicking *Run CIC Cmd* allows you to run CIC Pro commands.

Webmin CIC Application Windows

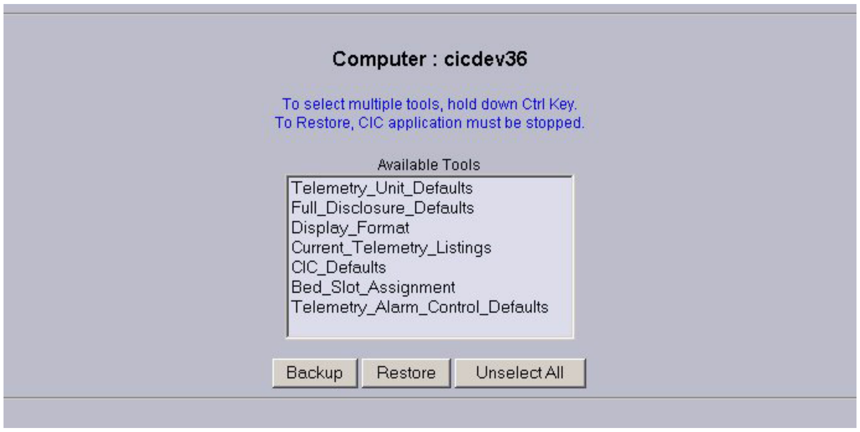
Backup-Restore CIC Configuration

1. Access the Webmin application according to "Remote Webmin Access from a Networked Computer" on page 7-3.

   NOTE

   The Backup-Restore CIC Configuration window only works when using remote computer connected to the CIC Pro computer through the Unity IX network. It will not work locally at CIC Pro Webmin computer.

2. Log in to Webmin according to "Webmin Login" on page 7-3.
3. Click the *CIC* tab.
4. Click the *Backup-Restore CIC Configuration* link. The following window displays:



Computer : cicdev36

To select multiple tools, hold down Ctrl Key.
To Restore, CIC application must be stopped.

Available Tools
Telemetry_Unit_Defaults
Full_Disclosure_Defaults
Display_Format
Current_Telemetry_Listings
CIC_Defaults
Bed_Slot_Assignment
Telemetry_Alarm_Control_Defaults
Backup
Restore
Unselect All

5. For the CIC Pro configuration backup procedure, see "Backup" on page 7-27.
6. For the CIC Pro configuration restore procedure, see "Restore" on page 7-30.

Backup/Restore Strategy and Examples

NOTE

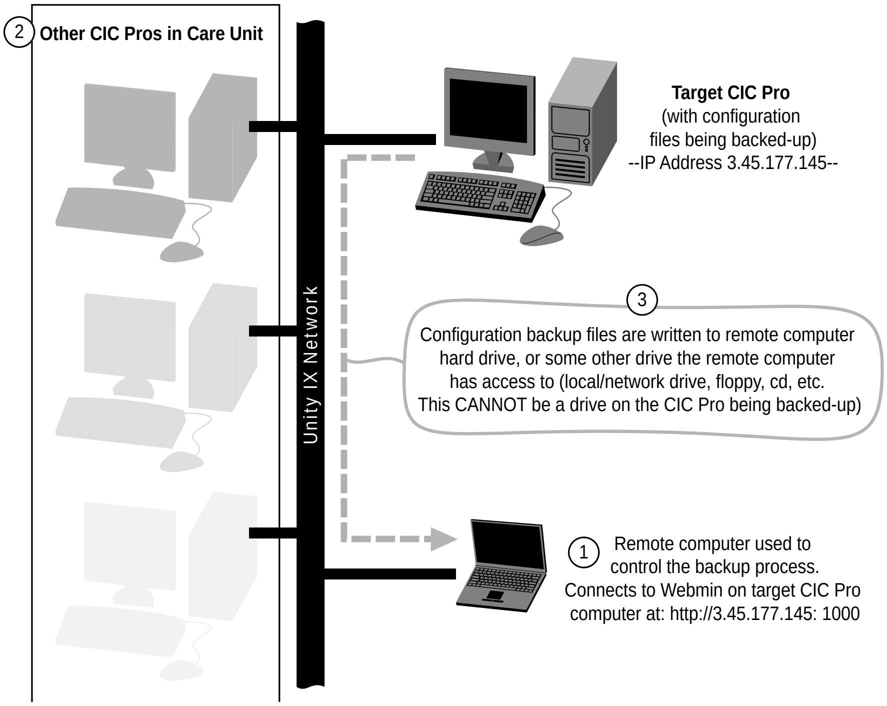
See "Data Module Detail" on page 7-33 for a summary of the data contained in the individual modules displayed in the *Available Tools* list. This summary also indicates configuration data, common to the care unit, that is automatically transferred between CIC Pros running in that care unit.

When planning a backup and restore strategy in a care unit running more than one CIC Pro, it's important to know that when a CIC Pro starts up, it will update some of it's CIC Pro configuration data to match any other CIC Pros it finds on the care unit network. The exact data that is automatically updated in this fashion is shown in "Data Module Detail" on page 7-33. In general, this would be data common to the care unit that should be consistent between all the CIC Pros within that care unit. All other configuration data is specific to the local CIC Pro computer only, and is not shared between the CIC Pros on the care unit network.

To follow are examples of CIC Pro use cases, demonstrating how this automatic update impacts the backup/restoration process:

Backup Process – The configuration backup is the same for all CIC Pro installations:

CIC Pro Configuration Backup Process


② Other CIC Pros in Care Unit
Unity IX Network
Target CIC Pro
(with configuration
files being backed-up)
--IP Address 3.45.177.145--
③
Configuration backup files are written to remote computer
hard drive, or some other drive the remote computer
has access to (local/network drive, floppy, cd, etc.
This CANNOT be a drive on the CIC Pro being backed-up)
① Remote computer used to
control the backup process.
Connects to Webmin on target CIC Pro
computer at: http://3.45.177.145: 1000

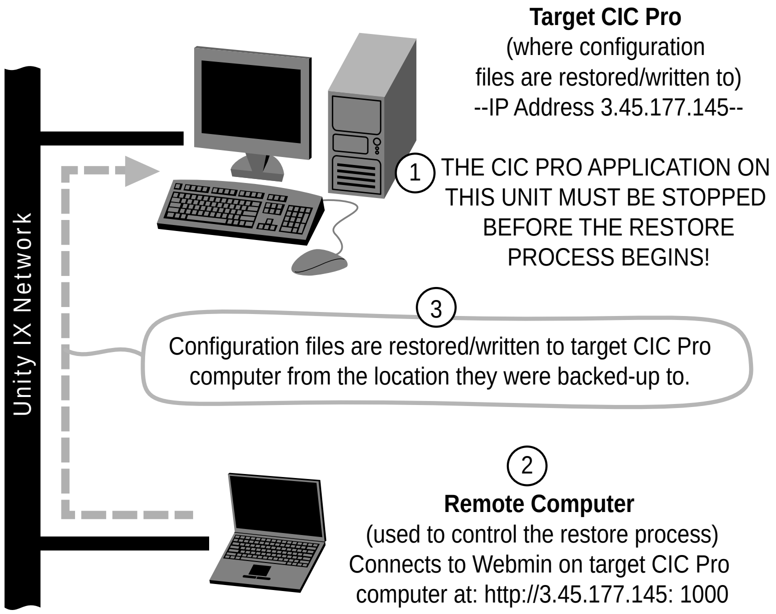
1. The Webmin Backup-Restore CIC Configuration window is accessed using the remote computer:
   a. A remote computer is connected to the same Unity IX Network as the target CIC Pro computer. The target CIC Pro computer is the computer with the configuration you want to back up.
   b. The Webmin application on the target CIC Pro computer is accessed using the web browser on the remote computer, according to "Remote Webmin Access from a Networked Computer" on page 7-3, using the IP Address of the target computer.
   c. Webmin login occurs according to "Webmin Login" on page 7-3.
   d. Selecting the *CIC* tab and clicking the *Backup-Restore CIC Configuration* link displays the Backup-Restore CIC Configuration window.
2. Other CIC Pros may be running in the same care unit, but they will have no effect on the backup process.
3. The backup process is run according to "Backup" on page 7-27. Configuration files are backed-up/written to a location apart from the target CIC Pro computer.

NOTE

CIC Pro configuration data should be periodically backed-up, especially before making any manual configuration changes to your CIC Pro installation. This allows for quick restore of previous configuration settings, if necessary. See "Restore Previous Configuration Data in Care Unit Running Multiple CIC Pros" on page 7-25.

Restore in Care Unit Running One CIC Pro – Automatic update does not occur, and is not a factor in this situation: all configuration data written to the CIC Pro during the restoration process remains intact, since there are no other CIC Pros to transfer configuration data from.

CIC Pro Configuration Restore Process
(In Care Unit with one CIC Pro)


Target CIC Pro
(where configuration
files are restored/written to)
--IP Address 3.45.177.145--
1
THE CIC PRO APPLICATION ON
THIS UNIT MUST BE STOPPED
BEFORE THE RESTORE
PROCESS BEGINS!
3
Configuration files are restored/written to target CIC Pro
computer from the location they were backed-up to.
Unity IX Network
2
Remote Computer
(used to control the restore process)
Connects to Webmin on target CIC Pro
computer at: http://3.45.177.145: 1000

1. The CIC Pro application on the target computer is stopped.

   NOTE

   The restore process will not work if the CIC Pro application on the target computer is running.

2. The Webmin Backup-Restore CIC Configuration window is accessed using the remote computer:

   a. If not already connected, a remote computer is connected to the same Unity IX Network as the target CIC Pro computer. The target CIC Pro computer is the computer you want to restore.

   b. The Webmin application on the target CIC Pro computer is accessed using the web browser on the remote computer, according to "Remote Webmin Access from a Networked Computer" on page 7-3, using the IP Address of the target computer.

   c. Webmin login occurs according to "Webmin Login" on page 7-3.

   d. Selecting the *CIC* tab and clicking the *Backup-Restore CIC Configuration* link displays the Backup-Restore CIC Configuration window.

3. The restore process is run according to "Restore" on page 7-30. Configuration files backed up earlier to a location apart from the target CIC Pro computer are restored to the target computer.

When the restoration process is complete, the CIC Pro application on the target computer is restarted.

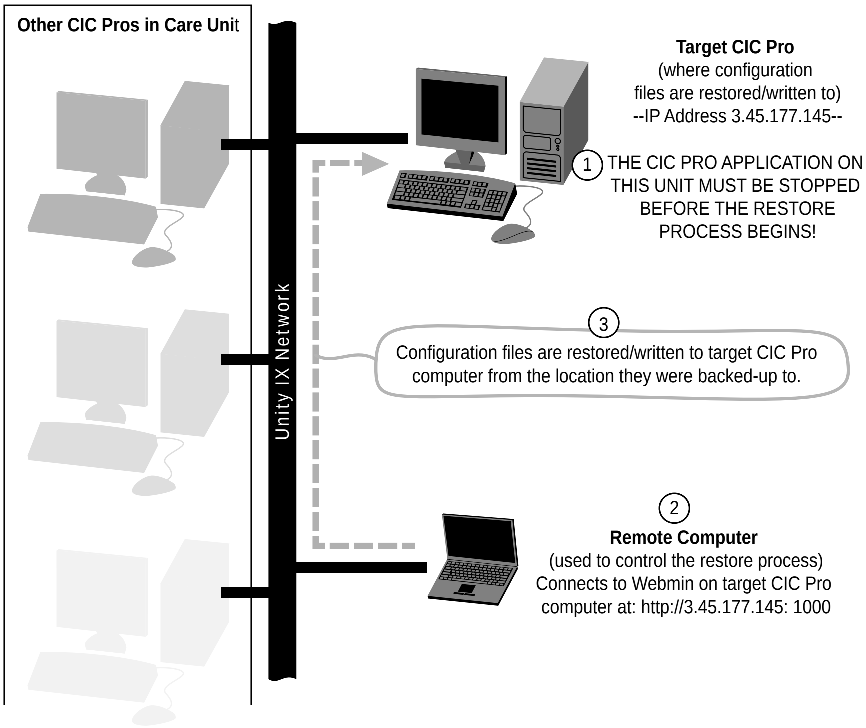
Adding/Upgrading a CIC Pro in Care Unit Running Multiple CIC Pros – When a CIC Pro is added to, or upgraded, in a care unit already running other CIC Pros, configuration data common to the care unit is automatically transferred to the new/upgraded CIC Pro (when it starts up) from the other CIC Pros on the care unit network. This transferred data over-writes similar configuration data written to the new/upgraded CIC Pro during the restore process. However, any configuration data specific only to the new/upgraded CIC Pro does not change.

NOTE

Common care unit data items automatically transferred between CIC Pro computers is shown in "Data Module Detail" on page 7-33.

First, configuration data is written to the new CIC Pro using the restore process as follows:

CIC Pro Configuration Restore Process
(Adding a CIC Pro to a Care Unit with Multiple CIC Pros)


Other CIC Pros in Care Unit
Unity IX Network
Target CIC Pro
(where configuration
files are restored/written to)
--IP Address 3.45.177.145--
①
THE CIC PRO APPLICATION ON THIS UNIT MUST BE STOPPED BEFORE THE RESTORE PROCESS BEGINS!
③
Configuration files are restored/written to target CIC Pro computer from the location they were backed-up to.
②
Remote Computer
(used to control the restore process)
Connects to Webmin on target CIC Pro computer at: http://3.45.177.145: 1000

1. The CIC Pro application on the target computer is stopped.

   NOTE

   The restore process will not work if the CIC Pro application on the target computer is running.

2. The Webmin Backup-Restore CIC Configuration window is accessed using the remote computer:

   a. If not already connected, a remote computer is connected to the same Unity IX Network as the target CIC Pro computer. The target CIC Pro computer is the computer the configuration files are written to during the restore process.

   b. The Webmin application on the target CIC Pro computer is accessed using the web browser on the remote computer, according to "Remote Webmin Access from a Networked Computer" on page 7-3, using the IP Address of the target computer

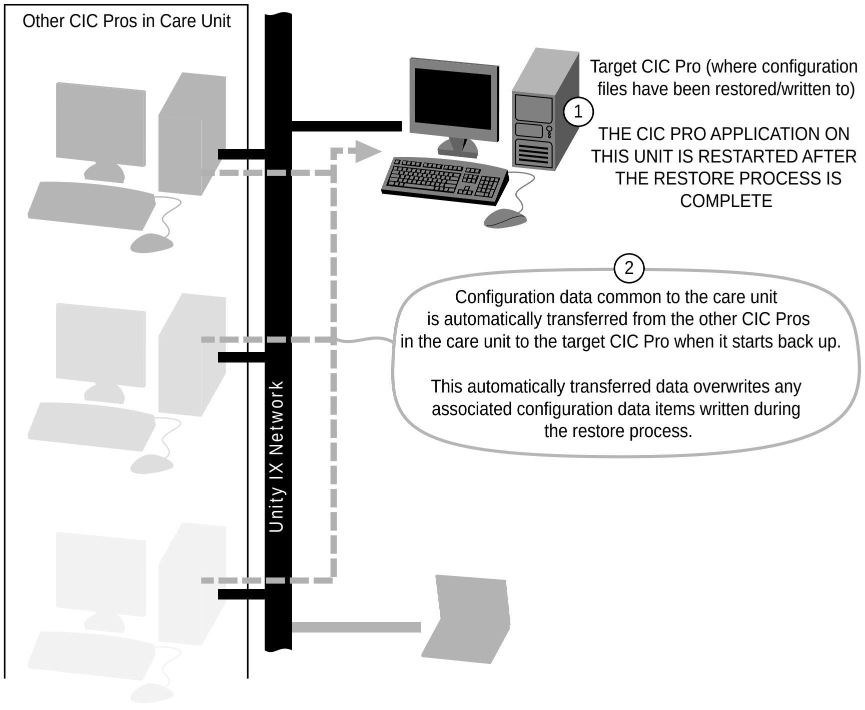
   c. Webmin login occurs according to "Webmin Login" on page 7-3.

   d. Selecting the *CIC* tab and clicking the *Backup-Restore CIC Configuration* link displays the Backup-Restore CIC Configuration window.

3. The restore process is run according to "Restore" on page 7-30. Configuration files backed up earlier to a location apart from the target CIC Pro computer are restored to the target computer.

Next, after the configuration restore data is written to the new CIC Pro, the following start-up procedure must occur to transfer configuration data common to the existing CIC Pros in care unit to the new CIC Pro:

AFTER CIC Pro Configuration Restore Process
(Adding a CIC Pro to a Care Unit with Multiple CIC Pros)



Target CIC Pro (where configuration files have been restored/written to)

THE CIC PRO APPLICATION ON THIS UNIT IS RESTARTED AFTER THE RESTORE PROCESS IS COMPLETE

Configuration data common to the care unit is automatically transferred from the other CIC Pros in the care unit to the target CIC Pro when it starts back up.

This automatically transferred data overwrites any associated configuration data items written during the restore process.

1. The CIC Pro application on the new (target) computer is restarted.

2. Common configuration data associated with the care unit is automatically transferred from the existing CIC Pro computers, to the new CIC Pro computer, over-writing similar configuration data written during the restore process.

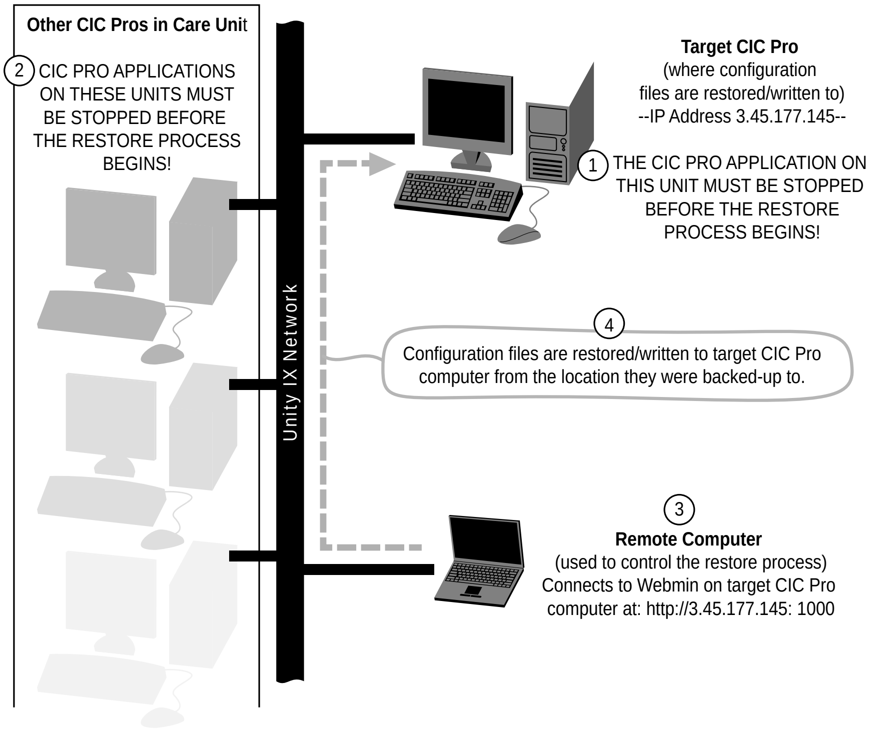
   NOTE

   Common care unit data items automatically transferred between CIC Pro computers is shown in "Data Module Detail" on page 7-33.

Restore Previous Configuration Data in Care Unit Running Multiple CIC Pros – In certain cases, it may be necessary to revert the CIC Pros in a care unit to a past configuration.

First, configuration restore data is written to a target CIC Pro computer in the care unit using the restore process as follows:

CIC Pro Configuration Restore Process
(Reverting multiple CIC Pro configurations in a care unit)



② CIC PRO APPLICATIONS ON THESE UNITS MUST BE STOPPED BEFORE THE RESTORE PROCESS BEGINS!

Target CIC Pro
(where configuration files are restored/written to)
--IP Address 3.45.177.145--

① THE CIC PRO APPLICATION ON THIS UNIT MUST BE STOPPED BEFORE THE RESTORE PROCESS BEGINS!

④ Configuration files are restored/written to target CIC Pro computer from the location they were backed-up to.

③ **Remote Computer**
(used to control the restore process)
Connects to Webmin on target CIC Pro computer at: http://3.45.177.145: 1000

1. The CIC Pro application on the target (new) computer is stopped.

   NOTE

   The restore process will not work if the CIC Pro application on the target computer is running.

2. All remaining CIC Pro applications on other computers in the care unit are stopped.

   NOTE

   Common care unit configuration data is automatically updated to match other CIC Pros found running on the care unit network. If other CIC Pros are left running when the target (restored) CIC Pro application is restarted, configuration data is transferred from the other CIC Pros, changing the data written during the restore process.

3. The Webmin Backup-Restore CIC Configuration window is accessed using the remote computer:

   a. If not already connected, a remote computer is connected to the same Unity IX Network as the target CIC Pro computer. The target CIC Pro computer is the computer you want to restore.

   b. The Webmin application on the target CIC Pro computer is accessed using the web browser on the remote computer, according to “Remote Webmin Access from a Networked Computer” on page 7-3, using the IP Address of the target computer

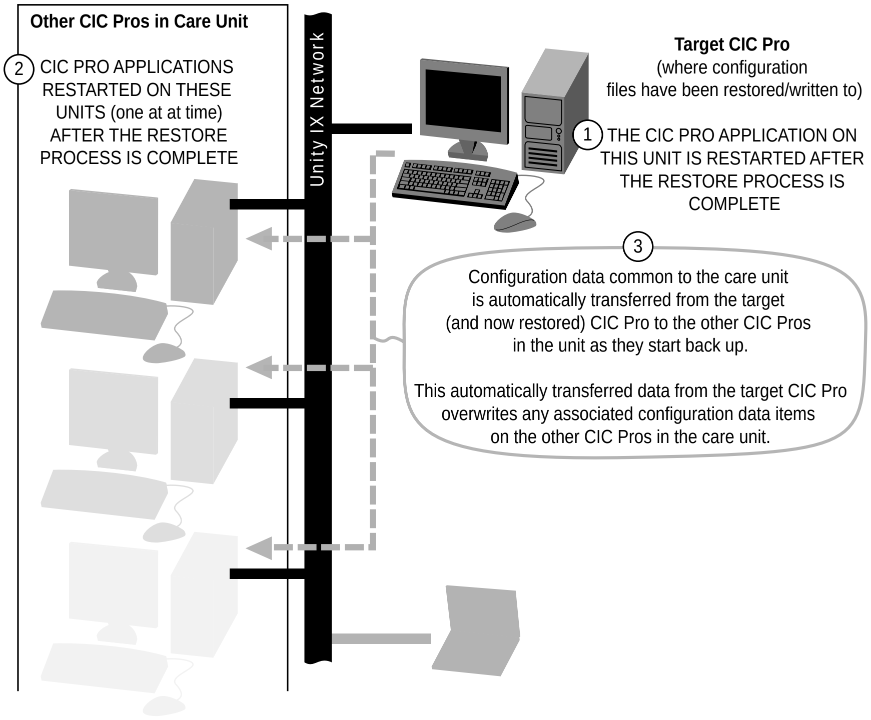
   c. Webmin login occurs according to “Webmin Login” on page 7-3.

   d. Selecting the *CIC* tab and clicking the *Backup-Restore CIC Configuration* link displays the Backup-Restore CIC Configuration window.

4. The restore process is run according to “Restore” on page 7-30. The configuration backed up earlier to a location apart from the target CIC Pro computer is restored/written to the target computer.

Next, after the configuration data is written to the target CIC Pro, the following start-up procedure must occur to transfer restored common care unit configuration data from the target CIC Pro computer to the other CIC Pro computers in the care unit:

AFTER CIC Pro Configuration Restore Process
(Reverting multiple CIC Pro configurations in a care unit)

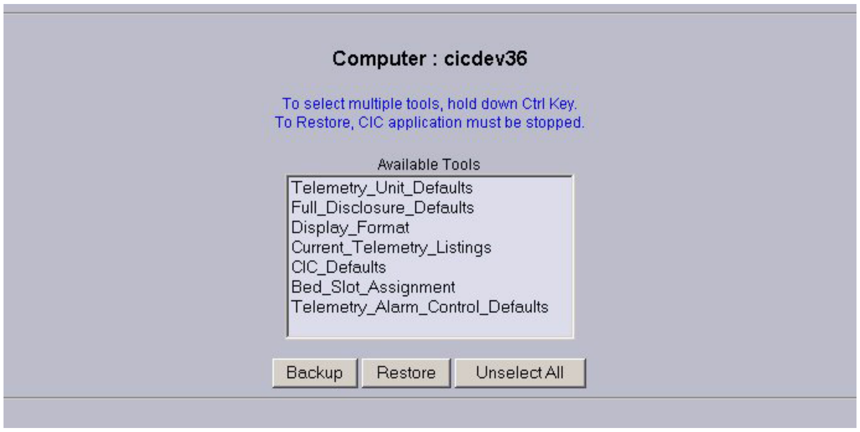

Other CIC Pros in Care Unit
2 CIC PRO APPLICATIONS RESTARTED ON THESE UNITS (one at at time) AFTER THE RESTORE PROCESS IS COMPLETE
Unity IX Network
Target CIC Pro
(where configuration files have been restored/written to)
1 THE CIC PRO APPLICATION ON THIS UNIT IS RESTARTED AFTER THE RESTORE PROCESS IS COMPLETE
3
Configuration data common to the care unit is automatically transferred from the target (and now restored) CIC Pro to the other CIC Pros in the unit as they start back up.
This automatically transferred data from the target CIC Pro overwrites any associated configuration data items on the other CIC Pros in the care unit.

1. The CIC Pro application on the target computer is restarted.
2. All other CIC Pro applications on other computers in the care unit are restarted one at a time.
3. Common configuration data associated with the care unit is automatically transferred from the target CIC Pro computer to the other CIC Pro computers, over-writing common care unit configuration data on those computers.

NOTE

Common care unit data items automatically transferred between CIC Pro computers is shown in “Data Module Detail” on page 7-33.

Backup



Computer : cicdev36

To select multiple tools, hold down Ctrl Key.
To Restore, CIC application must be stopped.

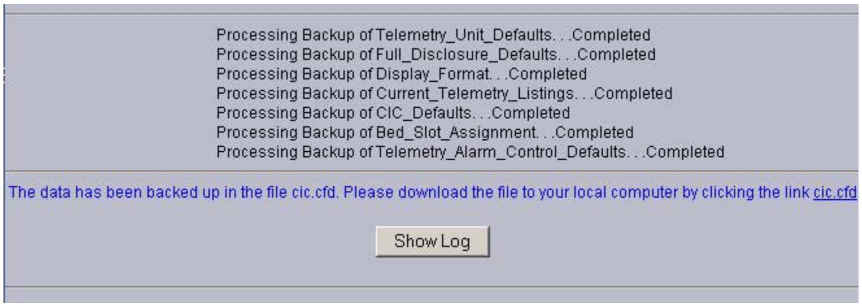
Available Tools
Telemetry_Unit_Defaults
Full_Disclosure_Defaults
Display_Format
Current_Telemetry_Listings
CIC_Defaults
Bed_Slot_Assignment
Telemetry_Alarm_Control_Defaults
Backup
Restore
Unselect All

1. Select the modules from the *Available Tools* list you want to backup. Click *Unselect All* to deselect selected files.

   NOTE

   Ctrl + click to select multiple modules. Click *Unselect All* to deselect modules in the list.

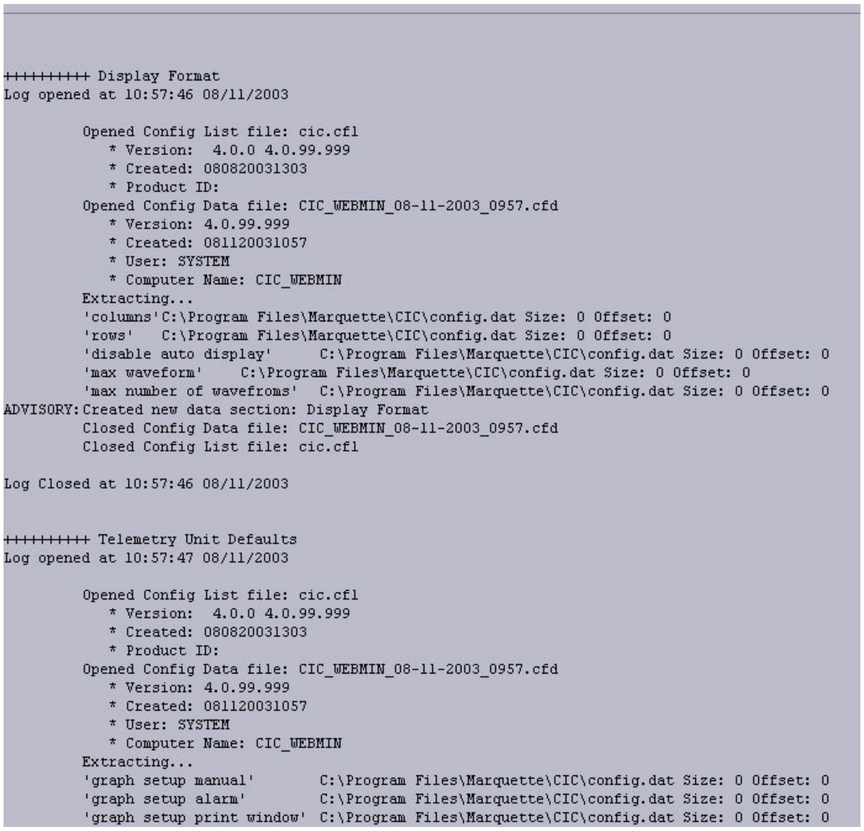
2. Click *Backup*. The selected files are temporarily written to the CIC Pro computer and prepared for downloading to your local computer.



```
Processing Backup of Telemetry_Unit_Defaults. . .Completed
Processing Backup of Full_Disclosure_Defaults. . .Completed
Processing Backup of Display_Format. . .Completed
Processing Backup of Current_Telemetry_Listings. . .Completed
Processing Backup of CIC_Defaults. . .Completed
Processing Backup of Bed_Slot_Assignment. . .Completed
Processing Backup of Telemetry_Alarm_Control_Defaults. . .Completed
```

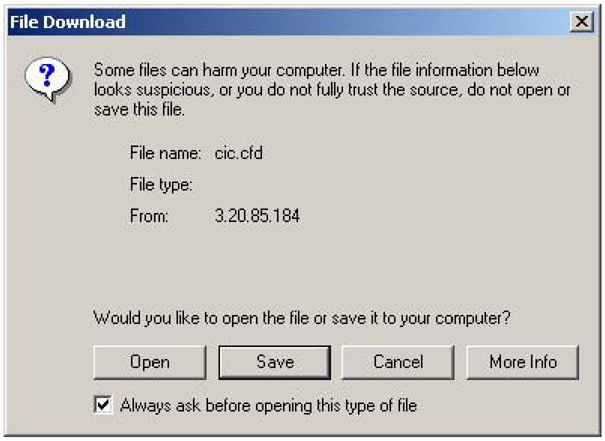
The data has been backed up in the file cic.cfd. Please download the file to your local computer by clicking the link cic.cfd

3. Click *Show Log* to view a summary of the backup configuration file building process.



```
++++++++++ Display Format
Log opened at 10:57:46 08/11/2003

         Opened Config List file: cic.cfl
            * Version:  4.0.0 4.0.99.999
            * Created: 080820031303
            * Product ID:
         Opened Config Data file: CIC_WEBMIN_08-11-2003_0957.cfd
            * Version: 4.0.99.999
            * Created: 081120031057
            * User: SYSTEM
            * Computer Name: CIC_WEBMIN
         Extracting...
         'columns'C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
         'rows'   C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
         'disable auto display'     C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
         'max waveform'    C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
         'max number of wavefroms'  C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
ADVISORY:Created new data section: Display Format
         Closed Config Data file: CIC_WEBMIN_08-11-2003_0957.cfd
         Closed Config List file: cic.cfl

Log Closed at 10:57:46 08/11/2003


++++++++++ Telemetry Unit Defaults
Log opened at 10:57:47 08/11/2003

         Opened Config List file: cic.cfl
            * Version:  4.0.0 4.0.99.999
            * Created: 080820031303
            * Product ID:
         Opened Config Data file: CIC_WEBMIN_08-11-2003_0957.cfd
            * Version: 4.0.99.999
            * Created: 081120031057
            * User: SYSTEM
            * Computer Name: CIC_WEBMIN
         Extracting...
         'graph setup manual'       C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
         'graph setup alarm'        C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
         'graph setup print window'  C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
```

4. Click the cic.cfd link to begin the download process. A file download window displays.



Some files can harm your computer. If the file information below looks suspicious, or you do not fully trust the source, do not open or save this file.

File name: cic.cfd

File type:

From: 3.20.85.184

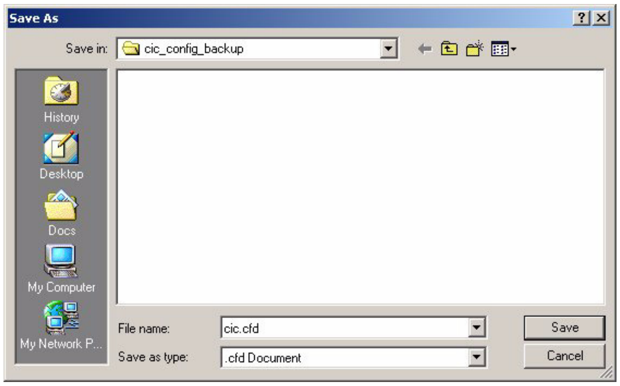
Would you like to open the file or save it to your computer?

☑ Always ask before opening this type of file

NOTE

> Depending upon the operating system of your local computer, the following download windows may be slightly different.

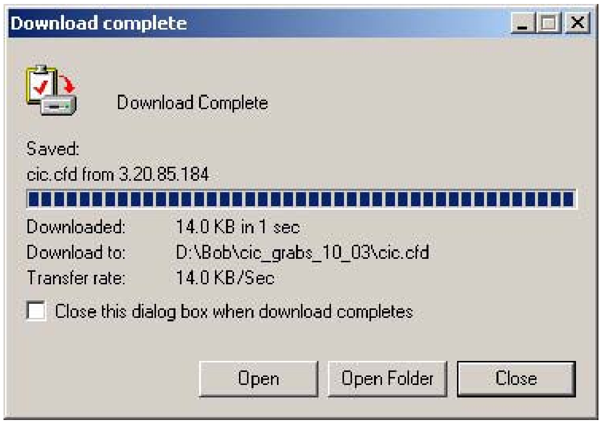
5. Click *Save*. The *Save As* window displays. Navigate to a directory on your local computer where you want to save the downloaded configuration file.


Save As
Save in:
cic_config_backup
History
Desktop
Docs
My Computer
My Network P...
Save
Cancel

File name: cic.cfd

Save as type: .cfd Document

6. Click *Save*. After the file is downloaded, the *Download complete* window displays. Click *Close* to close the *Download complete* window.


Download complete
Open
Open Folder
Close

Download Complete

Saved:
cic.cfd from 3.20.85.184

Downloaded: 14.0 KB in 1 sec
Download to: D:\Bob\cic_grabs_10_03\cic.cfd
Transfer rate: 14.0 KB/Sec

☐ Close this dialog box when download completes

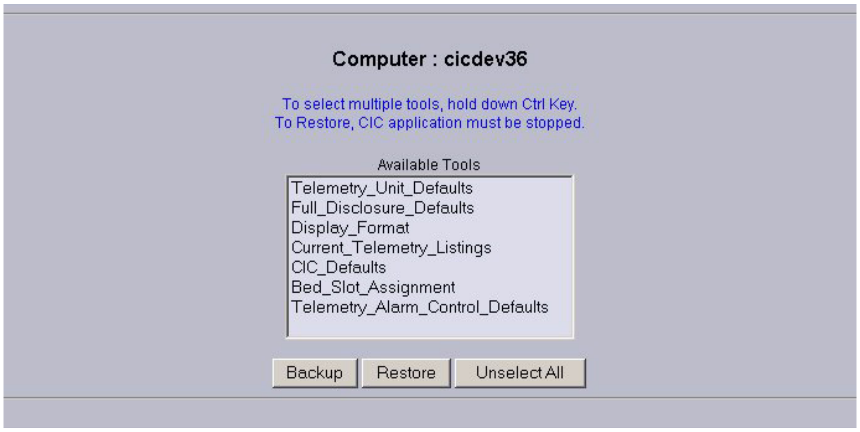
Restore

1. Select the modules from the *Available Tools* list you want to restore.

NOTE

Modules selected from the list should match the modules that were selected when the configuration was backed up during "Backup" on page 7-27. Modules selected for restore not selected during backup will not contain any data.

For accurate information about the results of a restore procedure, view the restore log, as directed in step 7.



Computer : cicdev36

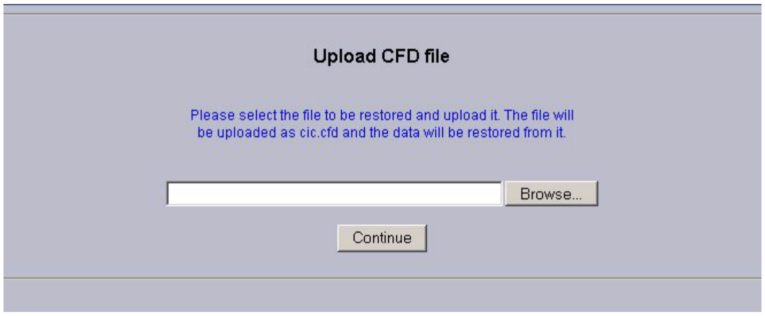
To select multiple tools, hold down Ctrl Key.
To Restore, CIC application must be stopped.

Available Tools
Telemetry_Unit_Defaults
Full_Disclosure_Defaults
Display_Format
Current_Telemetry_Listings
CIC_Defaults
Bed_Slot_Assignment
Telemetry_Alarm_Control_Defaults
Backup
Restore
Unselect All

NOTE

Ctrl + click to select multiple items from the lists. Click *Unselect All* to deselect items in the lists.

2. Click *Restore*. The *Upload CFD file* window displays.



Upload CFD file

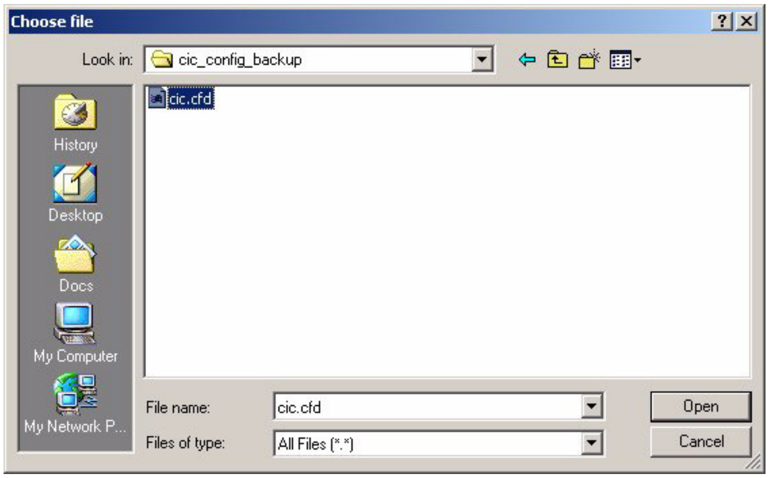
Please select the file to be restored and upload it. The file will be uploaded as cic.cfd and the data will be restored from it.

Browse...
Continue

3. Click *Browse...* . The *Choose file* window displays.

NOTE

Depending upon the operating system of your local computer, the following download windows may be slightly different.



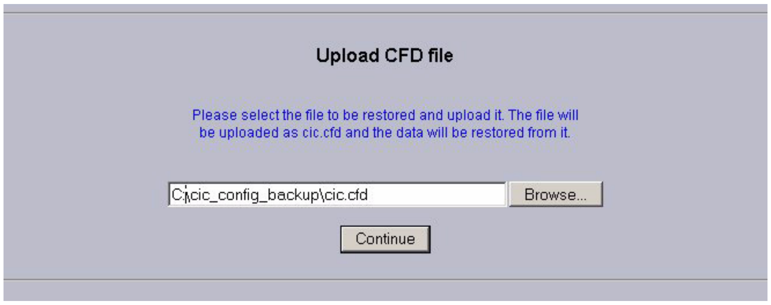
Look in: cic_config_backup

cic.cfd

File name: cic.cfd

Files of type: All Files (*.*)

4. Navigate to the previously downloaded configuration file. Select the file and click *Open.* The path to the file displays in the *Upload CFD file* window.

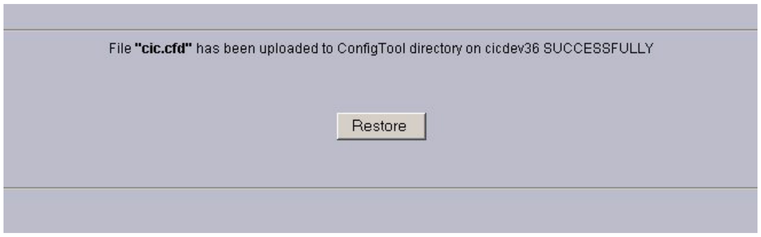


Upload CFD file

Please select the file to be restored and upload it. The file will be uploaded as cic.cfd and the data will be restored from it.

C:\cic_config_backup\cic.cfd

5. Click *Continue*. The configuration file is uploaded to the *ConfigTool* directory on the CIC Pro computer.

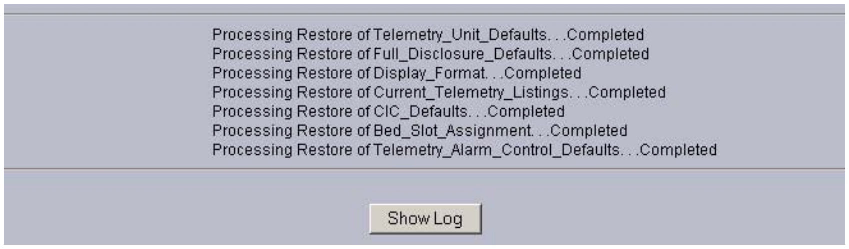


File **"cic.cfd"** has been uploaded to ConfigTool directory on cicdev36 SUCCESSFULLY

6. Click *Restore* to complete the configuration restore process. Progress of the restoration process is displayed.

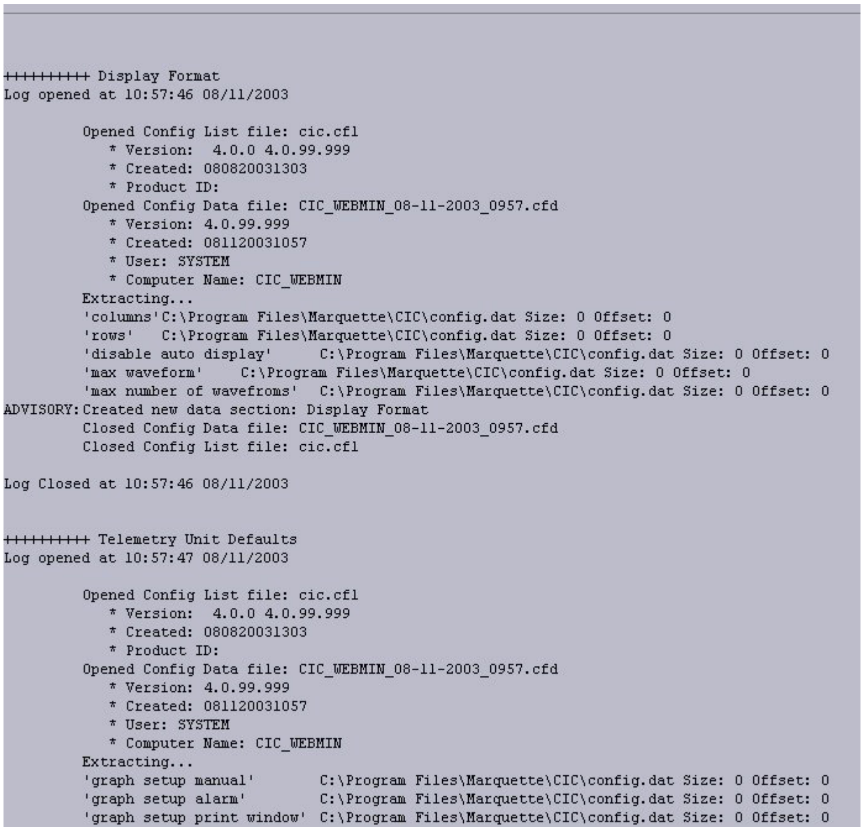
NOTE

The CIC Pro application must be stopped before the configuration settings can be restored.



```
Processing Restore of Telemetry_Unit_Defaults. . .Completed
Processing Restore of Full_Disclosure_Defaults. . .Completed
Processing Restore of Display_Format. . .Completed
Processing Restore of Current_Telemetry_Listings. . .Completed
Processing Restore of CIC_Defaults. . .Completed
Processing Restore of Bed_Slot_Assignment. . .Completed
Processing Restore of Telemetry_Alarm_Control_Defaults. . .Completed
```

7. Click *Show Log* to view a summary of the completed configuration restore process.



```
++++++++++ Display Format
Log opened at 10:57:46 08/11/2003

         Opened Config List file: cic.cfl
            * Version:  4.0.0 4.0.99.999
            * Created: 080820031303
            * Product ID:
         Opened Config Data file: CIC_WEBMIN_08-11-2003_0957.cfd
            * Version: 4.0.99.999
            * Created: 081120031057
            * User: SYSTEM
            * Computer Name: CIC_WEBMIN
         Extracting...
         'columns'C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
         'rows'   C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
         'disable auto display'      C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
         'max waveform'    C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
         'max number of wavefroms'   C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
ADVISORY:Created new data section: Display Format
         Closed Config Data file: CIC_WEBMIN_08-11-2003_0957.cfd
         Closed Config List file: cic.cfl

Log Closed at 10:57:46 08/11/2003


++++++++++ Telemetry Unit Defaults
Log opened at 10:57:47 08/11/2003

         Opened Config List file: cic.cfl
            * Version:  4.0.0 4.0.99.999
            * Created: 080820031303
            * Product ID:
         Opened Config Data file: CIC_WEBMIN_08-11-2003_0957.cfd
            * Version: 4.0.99.999
            * Created: 081120031057
            * User: SYSTEM
            * Computer Name: CIC_WEBMIN
         Extracting...
         'graph setup manual'       C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
         'graph setup alarm'        C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
         'graph setup print window'  C:\Program Files\Marquette\CIC\config.dat Size: 0 Offset: 0
```

Data Module Detail

The following table lists summary detail information associated with data modules listed as *Available Tools* in the *Backup-Restore CIC Configuration* window.

Backup-Restore CIC Configuration Data Module Detail		
Data backed up/Restored	Data Source	Common Care Unit Data (Automatically Transferred)
Telemetry Alarm Control Defaults		
Parameter Limits	Limits.def/Limits.mei	Yes
Parameter Alarm Levels	Param.def/Param.mei	Yes
Arrhythmia Alarm Levels	Arrhy.def/Arrhy.mei	Yes
System Alarm Levels	System.def/System.mei	Yes
Full Disclosure Defaults		
Report Duration	NewTelem.def	Yes
Report Hole Location	NewTelem.def	Yes
Include Graybar	NewTelem.def	Yes
Include Arrhythmia Annotations	NewTelem.def	Yes
Include Heart rate	NewTelem.def	Yes
Line Time	NewTelem.def	Yes
Strip Duration	NewTelem.def	Yes
Strip Hole Location	NewTelem.def	Yes
Full Disclosure License	NewTelem.def	Yes
Full Disclosure Offline Storage	NewTelem.def	Yes
Start Data Storage	NewTelem.def	Yes
Bedlist	Fd.all	Yes
Display Format		
Columns	Config.dat	No
Rows	Config.dat	No
Disable Auto Display button	Config.dat	No
Maximize Waveform length	Config.dat	No
Maximize No. of Waveforms	Config.dat	No

Backup-Restore CIC Configuration Data Module Detail		
Data backed up/Restored	Data Source	Common Care Unit Data (Automatically Transferred)
Current Telemetry Listings		
Telemetry Bed List	Telebeds.all	Yes
Hardwire Bed List	Hardwire.all	Yes
Transmitter List	Ttx.all	Yes
CIC Defaults		
Central Name	Config.dat	No
Unit Name	Config.dat	No
ECG1WaveForm	Config.dat	No
Waveform2	Config.dat	No
Waveform3	Config.dat	No
Waveform4	Config.dat	No
Laser Printer	Config.dat	No
DDW Printer	Config.dat	No
FullDisclosure Printer	Config.dat	No
Mirror Central Display	Config.dat	No
Alarm Volume	Config.dat	No
Browser Enabled	Config.dat	No
Browser Status	Config.dat	No
ColorSetECG0	Config.dat	No
ColorSetECG1	Config.dat	No
ColorSetECG2	Config.dat	No
ColorSetECG3	Config.dat	No
ColorSetECG4	Config.dat	No
ColorSetECG5	Config.dat	No
ColorSetECG6	Config.dat	No
ColorSetART	Config.dat	No
ColorSetPA	Config.dat	No
ColorSetFEM	Config.dat	No
ColorSetCVP	Config.dat	No

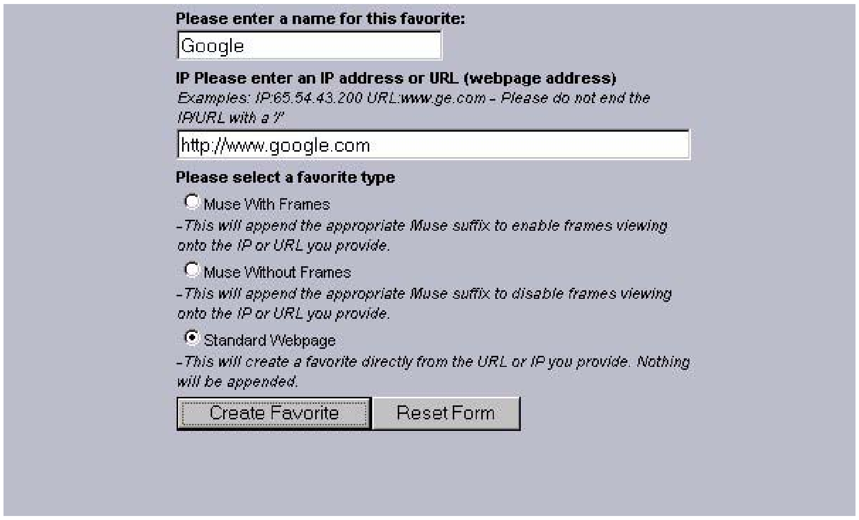
Backup-Restore CIC Configuration Data Module Detail		
Data backed up/Restored	Data Source	Common Care Unit Data (Automatically Transferred)
ColorSetRA	Config.dat	No
ColorSetLA	Config.dat	No
ColorSetICP	Config.dat	No
ColorSetSP	Config.dat	No
ColorSetUAC	Config.dat	No
ColorSetUVC	Config.dat	No
ColorSetRESP	Config.dat	No
ColorSetSPO2	Config.dat	No
ColorSetCO2	Config.dat	No
ColorOption	Config.dat	No
Central Name	Config.data	No
Telemetry Unit Defaults		
Graph Set Manual	Config.dat	No
Graph Setup Alarm	Config.dat	No
Graph Setup Print Window	Config.dat	No
Graph Setup ECG1	Telem.def	Yes
Graph Setup Waveform2	Telem.def	Yes
Graph Setup Waveform3	Telem.def	Yes
Graph Setup Waveform4	Telem.def	Yes
Transmitter Graph	Telem.def	Yes
Alarm Graph	NewTelem.def	Yes
Nurse Call Graph	NewTelem.def	Yes
Display Lead	Telem.def	Yes
Arrhythymia	Telem.def	Yes
Lead Analysis	Telem.def	Yes
ST Analysis	Telem.def	Yes
Va Lead	NewTelem.def	Yes
Vb Lead	NewTelem.def	Yes
Detect pace	Telem.def	Yes

Backup-Restore CIC Configuration Data Module Detail		
Data backed up/Restored	Data Source	Common Care Unit Data (Automatically Transferred)
Patient Age	Telem.def	Yes
Transmitter Alarm pause	Telem.def	Yes
Alarm Pause Breakthrough	NewTelem.def	Yes
PDT	NewTelem.def	Yes
Transmitter Nurse Call	NewTelem.def	Yes
Bed Slot Assignment		
Display Format	Config.dat	No
Beds Configured	Config.dat	No
Slot Information (From Slot 0 – Slot 32)		
Row, Column and Bed Name	Config.dat	No
Lead_or_site, position, scroll_speed	Config.dat	No
Colors	Config.dat	No
Bed Assignment	Config.dat	No
Lock Status	Config.dat	No

Create Favorite

1. Access the Webmin application according to “Webmin Access” on page 7-3.
2. Log in to Webmin according to “Webmin Login” on page 7-3.
3. Click the *CIC* tab.

4. Click the *Create Favorite* link. The following window displays:



Please enter a name for this favorite:

Google

IP Please enter an IP address or URL (webpage address)

Examples: IP:65.54.43.200 URL:www.ge.com - Please do not end the IP/URL with a '/'

http://www.google.com

Please select a favorite type

○ Muse With Frames

-This will append the appropriate Muse suffix to enable frames viewing onto the IP or URL you provide.

○ Muse Without Frames

-This will append the appropriate Muse suffix to disable frames viewing onto the IP or URL you provide.

● Standard Webpage

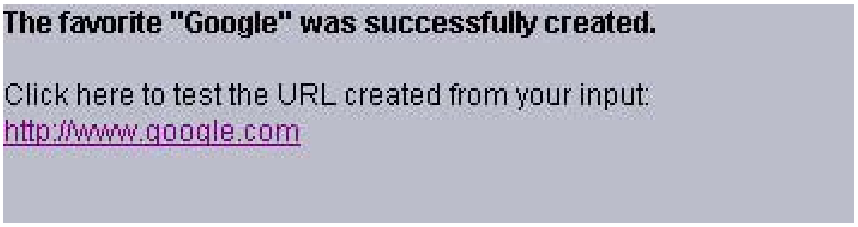
-This will create a favorite directly from the URL or IP you provide. Nothing will be appended.

This window is useful for adding favorites to the CIC Pro browser. It is a simpler, alternative method to the procedure described in "Use a Command Prompt to Connect to a Site" on page 8-9.

NOTE

For certain installations, the procedure described in "Use a Command Prompt to Connect to a Site" on page 8-9 will be the only method that works.

1. Type a name into the *Please enter a name for this favorite* field. The name will identify the favorite in the browsers *Favorites* menu.
2. Type the internet address or IP address into the *Please enter an IP address or URL (webpage address)* field.
3. Click to select a radio button associated with the link for the favorite.
4. If necessary, click *Reset Form* to clear the fields and selections on the page.
5. Click *Create Favorite*.



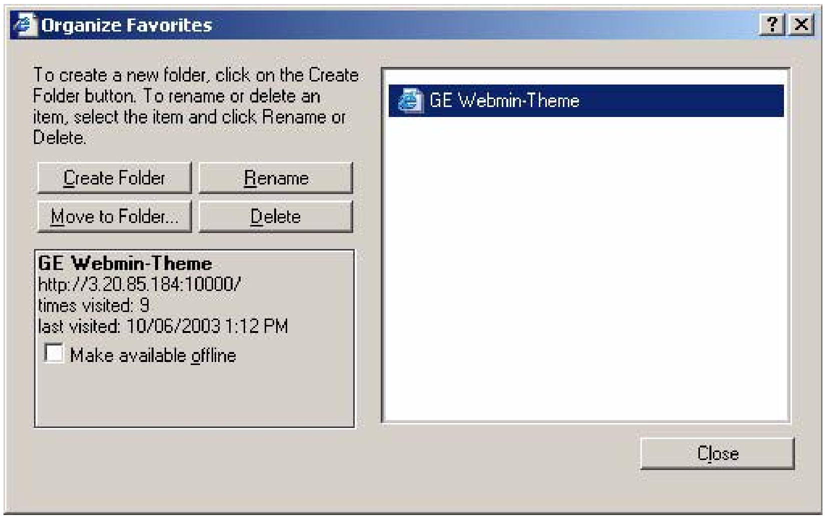
The favorite "Google" was successfully created.

Click here to test the URL created from your input:
http://www.google.com

6. Click the link to test the URL for the new favorite.

Delete Favorites

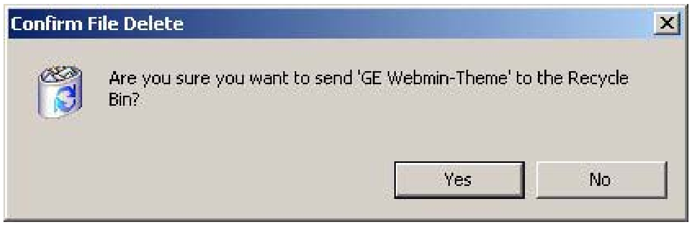
1. From the *Favorites* menu, select *Organize Favorites...*. The *Organize Favorites* window displays.



To create a new folder, click on the Create Folder button. To rename or delete an item, select the item and click Rename or Delete.

GE Webmin-Theme
http://3.20.85.184:10000/
times visited: 9
last visited: 10/06/2003 1:12 PM
☐ Make available offline

2. Select the favorite you want to delete from the list of favorites.
3. Click *Delete*.

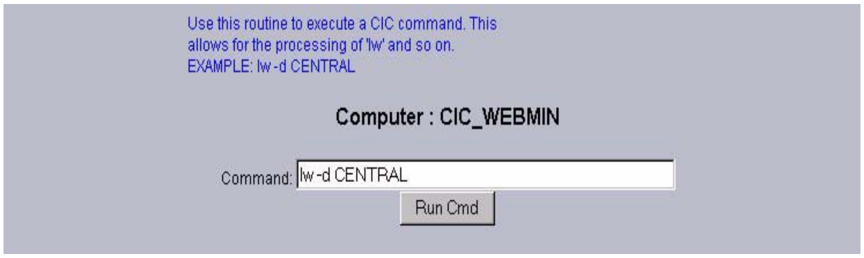


Are you sure you want to send 'GE Webmin-Theme' to the Recycle Bin?

4. Click *Yes* in the *Confirm File Delete* window to delete the selected favorite.

Run CIC Cmd

1. Access the Webmin application according to "Webmin Access" on page 7-3.
2. Log in to Webmin according to "Webmin Login" on page 7-3.
3. Click the *CIC* tab.
4. Click the *Run CIC Cmd* link. The following window displays:



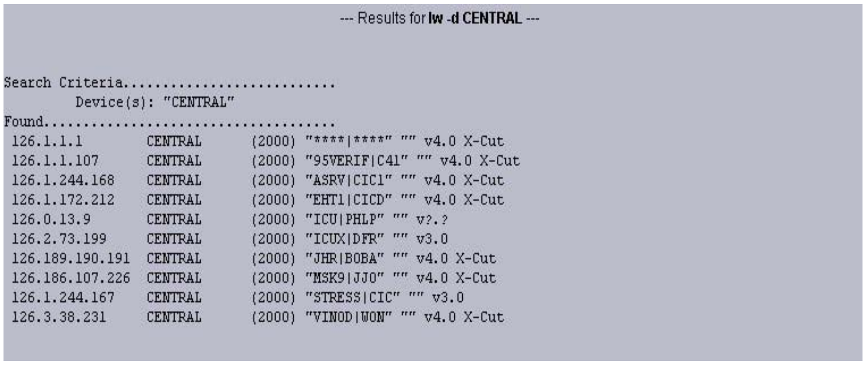
Use this routine to execute a CIC command. This allows for the processing of 'lw' and so on.
EXAMPLE: lw -d CENTRAL

Computer : CIC_WEBMIN

Command: lw -d CENTRAL

The *Run CIC Cmd* window allows you to execute single line Windows Command Prompts specific to CIC Pro.

1. Type the CIC Pro command code into the *Command* field.
2. Click *Run Cmd*.



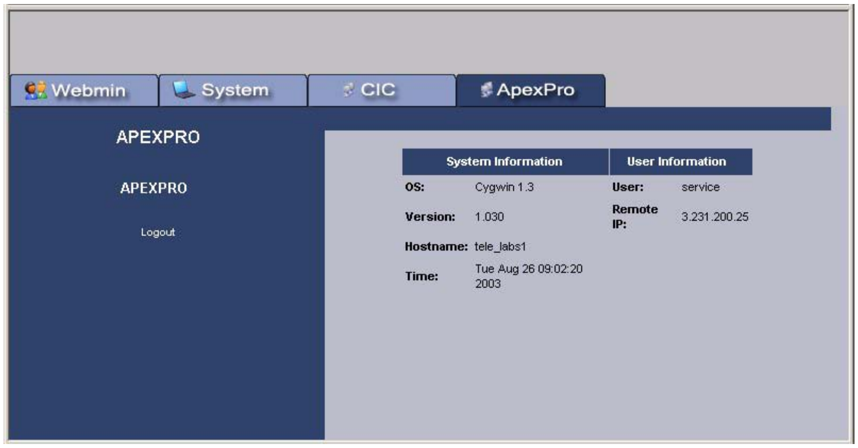
--- Results for **lw -d CENTRAL** ---

```
Search Criteria..........................
         Device(s): "CENTRAL"
Found....................................
 126.1.1.1        CENTRAL      (2000) "****|****" "" v4.0 X-Cut
 126.1.1.107      CENTRAL      (2000) "95VERIF|C41" "" v4.0 X-Cut
 126.1.244.168    CENTRAL      (2000) "ASRV|CIC1" "" v4.0 X-Cut
 126.1.172.212    CENTRAL      (2000) "EHT1|CICD" "" v4.0 X-Cut
 126.0.13.9       CENTRAL      (2000) "ICU|PHLP" "" v?.?
 126.2.73.199     CENTRAL      (2000) "ICUX|DFR" "" v3.0
 126.189.190.191  CENTRAL      (2000) "JHR|BOBA" "" v4.0 X-Cut
 126.186.107.226  CENTRAL      (2000) "MSK9|JJ0" "" v4.0 X-Cut
 126.1.244.167    CENTRAL      (2000) "STRESS|CIC" "" v3.0
 126.3.38.231     CENTRAL      (2000) "VINOD|WON" "" v4.0 X-Cut
```

ApexPro Tab

To access the *ApexPro* tab:

1. Access the Webmin application according to "Webmin Access" on page 7-3.
2. Log in to Webmin according to "Webmin Login" on page 7-3.
3. Click the *ApexPro* tab.



System Information		User Information	
OS:	Cygwin 1.3	**User:**	service
Version:	1.030	**Remote IP:**	3.231.200.25
Hostname:	tele_labs1		
Time:	Tue Aug 26 09:02:20 2003		

A Webmin *ApexPro* tab is available only on CIC Pro systems equipped with the optional ApexPro telemetry systems.

NOTE

> The Web *ApexPro* tab may not apply to your system, depending upon the specific ApexPro application you have installed. If applicable, refer to the separate service or configuration documentation for your specific ApexPro installation for detailed ApexPro Webmin information.

8 Troubleshooting

For your notes

Hardware General

Blank Display, Unit Doesn’t Boot

1. Verify that all components are connected correctly and the unit is plugged into a known good outlet.
2. Ensure that all cables are properly seated.
3. Remove all access panels on the CIC Pro server ensure all internal components are properly seated.

Troubleshooting the Components

Consult the computer and display monitor manufacturers’ manuals, which accompanied each component, for troubleshooting information for each component of the system.

The display monitor manufacturer provides a hard-copy manual and the PC tower manufacturer provides a manual in PDF format on CD-ROM. The PDF file reader software is already installed on the computer.

Audio Card Replacement

If you replace an Audio card, you must use the custom GE Medical Systems *Information Technologies* Audio card because the Sound Table settings can be affected.

See “Audio Card Removal/Installation” on page 6-37 for audio card field information.

CPU Board Replacement

If you replace a CPU board (motherboard), you must reconfigure the License File. See the *License Configuration Guide* for information on configuring the unit.

See “Motherboard Removal/Installation” on page 6-47 for CPU board field replacement information.

Troubleshooting Dual Monitors

Adding or Subtracting a Monitor

Adding a Monitor

If a second monitor is added to a CIC Pro server operating with a single monitor, re-configuration is required. See “Dual Monitor Installation and Configuration” on page 3-49.

Subtracting a Monitor

If a CIC Pro server is operating with dual monitors, and one monitor is removed (from either the primary or secondary video port), the system will not adjust display settings for the remaining monitor while CIC Pro is running.

When the CIC Pro server is rebooted, the system may automatically reconfigure display settings to adjust for the single, remaining monitor. See “Removing One Monitor From a Dual Monitor System” on page 3-52, to verify correct display setting after reboot.

NOTE

Simply turning the secondary monitor power off will not remove it from the system. The secondary monitor cable MUST be disconnected from the video port on the back of the CIC Pro.

Incorrect CIC Pro Application Colors

If the colors in the CIC Pro application are not correct, verify *High Color (16-bit)* is the *Color Pallet* selection in the *Settings* tab in the *Display Properties* Control Panel. For dual monitors, see “Dual Monitor Installation and Configuration” on page 3-49.

Controlling Electrostatic Discharge Damage

All external connector inputs and outputs of the device are designed with protection from ESD damage. However, if the device requires service, exposed components and assemblies contained within are susceptible to ESD damage. This includes human hands, non-ESD protected work stations and/or improperly grounded test equipment.

The following guidelines help make a service workstation more resistant to the ESD damage:

- Discharge any static charge you may have built up before handling semiconductors or assemblies containing semiconductors.
- A grounded, antistatic wristband (3M part number 2046 or equivalent) or heel strap should be worn at all times while handling or repairing assemblies containing semiconductors.
- Use properly grounded soldering and test equipment.
- Use a static-free work surface (3M part number 8210 or equivalent) while handling or working on assemblies containing semiconductors.

- Do NOT remove semiconductors or assemblies containing semiconductors from antistatic containers (Velo-stat bags) until absolutely necessary.
- Make sure power to an assembly is turned off before removing or inserting a semiconductor.
- Do NOT slide semiconductors or electrical/electronic assemblies across any surface.
- Do NOT touch semiconductor leads unless absolutely necessary.
- Semiconductors and electrical/electronic assemblies should be stored only in antistatic bags or boxes.

These guidelines may not guaranty a 100% static-free workstation, but greatly reduce the potential for failure of any electrical/electronic assemblies.

Accessing Service Utilities

The Service Utilities provide several advanced and specialized functions for configuring and troubleshooting the CIC Pro software.

WARNING
The Service Utilities are intended for use ONLY by qualified personnel with training and experience with their use. Do NOT "experiment" with any commands other than those shown in this manual. The consequences of misuse include loss of patient data, corruption of CIC Pro or operating system software, or disruption of the entire Unity Network MC network.

Command Prompt

To run any of the Service Utilities, invoke the *Windows NT Command Prompt*:

1. Use the mouse to select *Setup CIC* at the bottom of the screen.
2. From the *CIC Setup* screen, select the *Service Password* tab.
3. At the *service password* prompt type **mms_com** and press **Enter**.

   This enables the *Service Menu* and displays a command prompt window.

CIC Pro Log Files

Log files are kept by most devices on the Unity Network MC network.

The CIC Pro log files are located in the following directory:

\Program Files\Marquette\CIC\Log

The naming convention for the log files is as follows:

yyyymmdd.log

For example: 20020422.log is the log file for April 22,2002. There is one log file per day.

Copy CIC Pro Logs

1. Insert a formatted 1.4Meg disk into drive A.
2. From C:\Program Files\Marquette\CIC\4.*x*

   Type **cd..** and press **Enter**.

   You should be at the C:\Program Files\Marquette\CIC directory.
3. Type **cd log**, press **Enter**, type **dir**, and press **Enter** again.

   The logs should now display by year, month, and day.
4. Type **COPY<Space>20010916.LOG<Space>A:**

   (Example date is September 16, 2001.)
5. When done type **EXIT** and press **Enter**.

getlog Function

Once you locate the desired error log, you can copy the log over the network to a floppy disk or to another drive. Since error logs are text files, you can copy and read them into other computers using most text editors or word processing applications.

To retrieve the desired log files, use the *getlog* function as follows:

Usage: getlog<Space>[-n] [-s] [-d] [-t] [-p]

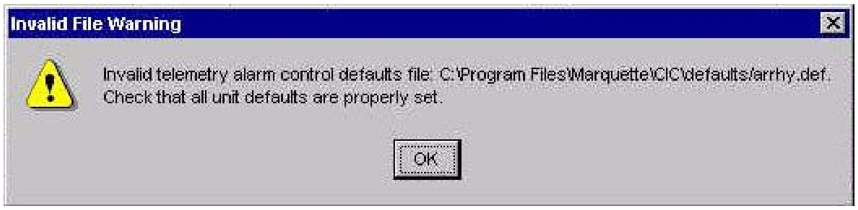
Function Descriptions		
Function		Description
getlog<Space>-n	[UNIT|]BED	Fetches logs from BED (‘UNIT’ is optional, ‘BED’ is mandatory).
getlog<Space>-s	YYYYMMDD	Starts on date *yyyymmdd* as in ‘19940428’ (default is today’s date).
getlog<Space>-d	#days	Number of days prior to start date (default is ALL available days).
getlog<Space>-t	type	Formats the output to a specific type (default is determined by device type): 1 - Tramscope Version 6 2 - Tramscope Version 7 3 - Tramscope Version 17 4 - Eagle 3000 5 - Eagle 4000 6 - Eagle Tmp 7 - Type 1TTX:Dropout
getlog<Space>-p	[dev:]/path	Saves logs to dev:/path (default outputs logs to this device).

CIC Pro In-Unit Incompatibility

When a CIC Pro starts up, it will change certain configuration data to match other CIC Pros it finds on the care unit network.

Because of this, In a care unit with more than one CIC Pro, newly upgraded CIC Pros will revert to match the older CIC Pros still running in the care unit. This can result in lost or corrupted telemetry alarm defaults data and loss of audible alarms, as stated in the WARNING above.

The following *Invalid File Warning* message displays as evidence of this problem.



Invalid File Warning

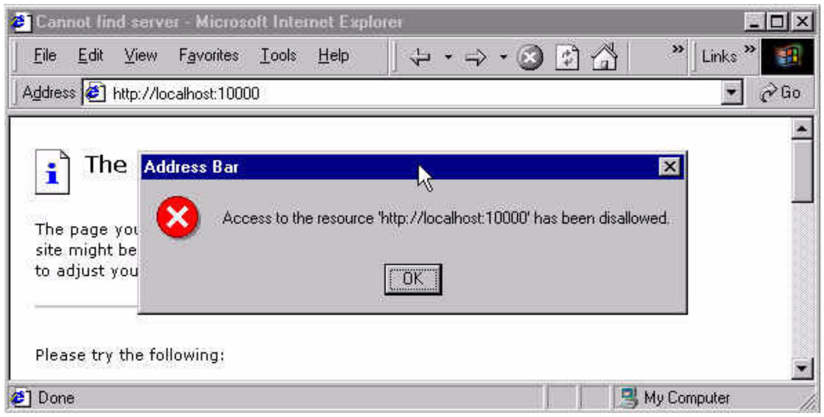
Invalid telemetry alarm control defaults file: C:\Program Files\Marquette\CIC\defaults/arrhy.def.
Check that all unit defaults are properly set.

The *Invalid File Warning* message will be displayed when tabs in the *Setup CIC* screen are selected.

If a problem is found, perform “Care Units with Multiple CIC Pros Telemetry Defaults Upgrade” **on page 3-53**.

Browser Troubleshooting

A parsing defect in the Microsoft Internet Explorer browser can, in some cases, prevent access to certain sites. Also, the level of security present on the CIC Pro server prevents running applications from the Windows desktop taskbar. The combination of these two factors contribute to loss of browser function under certain circumstances.



Cannot find server - Microsoft Internet Explorer

Address: http://localhost:10000

Address Bar

Access to the resource 'http://localhost:10000' has been disallowed.

Work-arounds for this are contained in this section.

Use a Command Prompt to Connect to a Site

It is possible to start Internet Explorer using a command prompt, with a web site location specified. This can bypass the parsing defect, and will allow you to add the location to the Internet Explorer *Favorites* menu. The location can be accessed from then on by selecting it from the *Favorites* menu.

NOTE

For alternate method for adding a favorite see “Create Favorite” on page 7-36.

To start Internet Explorer using a command prompt:

1. Use the mouse to select *Setup CIC* at the bottom of the screen.
2. From the *CIC Setup* screen, select the *Service Password* tab.
3. In the *Password* field type **mms_com** and press **Enter**.

   The *GE Marquette Clinical Information Center* command window opens. The title bar of this window should be blue to indicate it is active. If the window is NOT active, place the cursor inside this window and click to make it active.

   The prompt should display:

   "C:\Program Files\Marquette\CIC\*4.x*>"

   NOTE

   Software version “4.x” is used only as an example in the prompt and directory strings. The current software version found in the lower left hand corner of the *CIC Setup* screen should display in this string.

4. With the cursor at the end of the text string type **cd<space>C:\Program Files<space>ENG** and press **Enter**.

   NOTE

   Normal CIC Pro installations have more than one *Program File* directories, each for a specific language. The *Program File ENG* directory shown in this step is used in English speaking countries.

5. With the cursor at the end of the text string type **cd<space>Plus!/ Microsoft<space>Internet** and press **Enter**.
6. With the cursor at the end of the text string type **iexplore<space>[internet address]** and press **Enter**.

   NOTE

   [internet address] is the location you want the browser to display. Valid internet address examples are:

   - http://localhost:10000/ - the location for the Webmin application on the CIC Pro server at port 10000.
   - http://www.google.com - generic internet search engine.

7. Save the internet address location as a favorite:
   a. Select *Favorites* > *Add to Favorites*.
   b. Type a name for the favorite entry, or accept the default. Click *OK*.
8. Test the function of the new favorite entry.
   a. Select *File* > *Exit* to quit the browser application.

b. Restart the browser by clicking the *Browse* button at the top right corner of the CIC Pro multiple patient viewer window.

c. Select the new entry from the *Favorites* menu. Verify that the proper internet address location displays.

Address Field Entries

In some cases, adding a forward slash (/) to the end of an internet address in the address field can allow access to a web page.

Specific Web Applications

Webmin Connection Errors

The IP address and port of the Webmin web server must be specified to connect to Webmin. When connecting to Webmin using a browser running on the CIC Pro, it will not work to type this information directly into the *Address* field in the browser.

The CIC Pro interprets the port parameter in the *Address* field in the browser as an attempt to run an unknown program on the CIC Pro server. The server has no way of knowing the nature of this program, so the action is not allowed.

To bypass this issue, connect to Webmin using the browser *Favorites* menu, or run the browser using a command prompt. See “Use a Command Prompt to Connect to a Site” on page 8-9.

NOTE

If a *Favorites* menu entry does not exist for Webmin, one can be added once a connection is made using the command prompt.

MUSE Web Frame/No Frame Connection Errors

Button on the MUSE Web server introduction page allow you to select a display with, or without, frames. These buttons attempt to access a function disallowed by the CIC Pro.

Add the following suffixes to the MUSE Web address to bypass this problem:

Description	Suffix	Example
Frame (with borders)	Museweb.dll?InitializeDefaultPage?Frames=1	http://museserver1/Museweb.dll?InitializeDefaultPage?Frames=1
No Frame (without borders)	Museweb.dll?InitializeDefaultPage?Frames=0	http://museserver1/Museweb.dll?InitializeDefaultPage?Frames=0

Statview Administration Configuration Utility Connection Errors

No known CIC Pro browser connection problems are known to exist associated with the Statview Administration Configuration Utility. If problems are encountered, contact GE Medical Systems *Information Technologies* Technical Support.

Patient Viewer Version 1

The level of security present on the CIC Pro server currently prevents browser connection to Patient Viewer.

Other Connection Errors

If problems are encountered which are not included in this section, contact GE Medical Systems *Information Technologies* Technical Support.

Troubleshooting a CIC Pro Server Tower

Verify the green circle Health icon is present under the Intel Server Control icon (ISC).

1. Log on as *Administrator*
2. Double click on the *ISC* icon on the desktop
3. Double click on the server under the *Windows NT Server* Directory. The PC identifies itself by displaying its own Unity Network MC IP address (i.e. **126.*x.x.x*** [**126.*x.x.x***]).
4. Double click on the *ISC* icon on the right side of the window. Wait about 30 seconds for the application to initialize as shown in the lower left corner of the window.
5. When the *Ready* message appears on the lower left corner of the window, double click on the folder with the Unity Network MC IP address.
6. If the **Green** circle health icon is present, the system is good.

   If a **Red** circle with an "X" inside appears, then double click on this icon to see the system failure. Contact GE Medical Systems *Information Technologies* Technical Support for further diagnostic troubleshooting.

Intel Server Control (ISC–Nightshade Box *Only*)

System administrators can also use Intel Server Control (ISC) to:

- Remotely monitor server hardware sensors,
- Configure sensor thresholds,
- Configure, receive, and act upon alert events in the system event log (SEL),
- Configure audio or visual notifications in response to an event, or
- Configure options to shut down, reboot, or power-off the system automatically in response to an event.

Tracking System Status

Using ISC, you are also able to track system status and manage hardware conditions such as:

- Temperature,
- Voltage,
- Cooling fan status,
- Chassis intrusion,
- ECC memory,
- Processor status, and/or
- Power supply status.

Each of these conditions has a threshold or range of acceptable values. Default values are configured during system manufacturing. These values, along with the current readings, error status, and timer settings, can be configured and monitored through ISC. An event occurs when a parameter crosses a defined threshold. At the time an event occurs, ISC initiates the action you have configured.

For example, if the temperature reaches a level that is outside of the user-defined threshold, an event has occurred. You can configure ISC to respond to this event in multiple ways, such as:

- Display a message or sound an alert,
- Shut down the server, or
- Record the event in a system log.

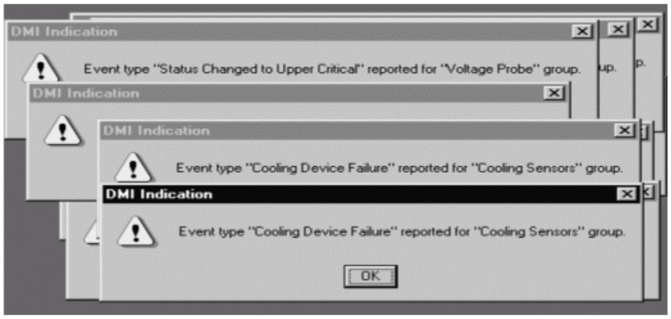
You can also use ISC to view:

- System hardware inventory,
- BIOS and system slot information, and/or
- Onboard Adaptec SCSI controller status.

DMI Error Message (Nightshade Box *Only*)

Problem:

DMI Indication error message appears on the screen (for CIC Pro towers with the GE Medical Systems *Information Technologies* product code “GU” or “GQ”).


DMI Indication
DMI Indication
DMI Indication
DMI Indication
OK

Event type "Status Changed to Upper Critical" reported for "Voltage Probe" group.

Event type "Cooling Device Failure" reported for "Cooling Sensors" group.

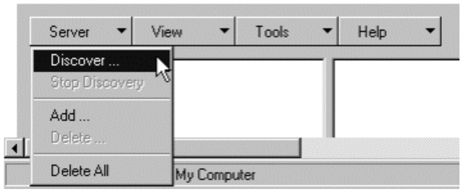
Event type "Cooling Device Failure" reported for "Cooling Sensors" group.

Solution:

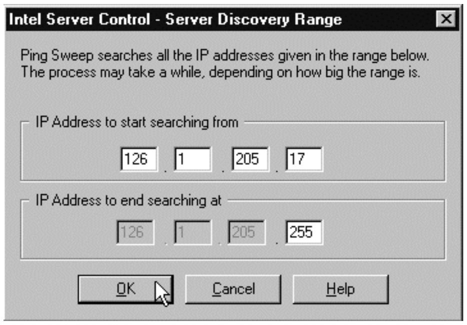
To restore the ISC to factory defaults:

1. Select *Setup CIC*.
2. Select the *Service Password* tab.
3. Type **mms_com** as the Password.
4. In the command box that opens, type **stop** then press **Enter**.
5. Click on *Start* then select *Shut Down* and *Close All Programs And Log On As Different User*.
6. Hold down **Shift** and select *Yes*.

   Continue holding until prompted for the password.
7. Type “**administrator**” as the User name and “**admin1,3,5,7**” as the Password then press **Enter**.
8. Double click on the “*isc*” icon on the desktop.
9. When the window opens select *Server* then *Discover*.


Server
View
Tools
Help
Discover ...
Stop Discovery
Add ...
Delete ...
Delete All
My Computer

10. The *Intel Server Control - Server Discovery Range* window now opens.



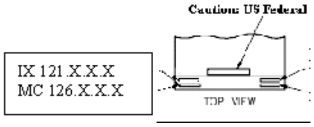
Intel Server Control - Server Discovery Range

Ping Sweep searches all the IP addresses given in the range below.
The process may take a while, depending on how big the range is.

IP Address to start searching from: 126 . 1 . 205 . 17

IP Address to end searching at: 126 . 1 . 205 . 255

OK
Cancel
Help



Caution: US Federal
IX 121.X.X.X
MC 126.X.X.X
TOP VIEW

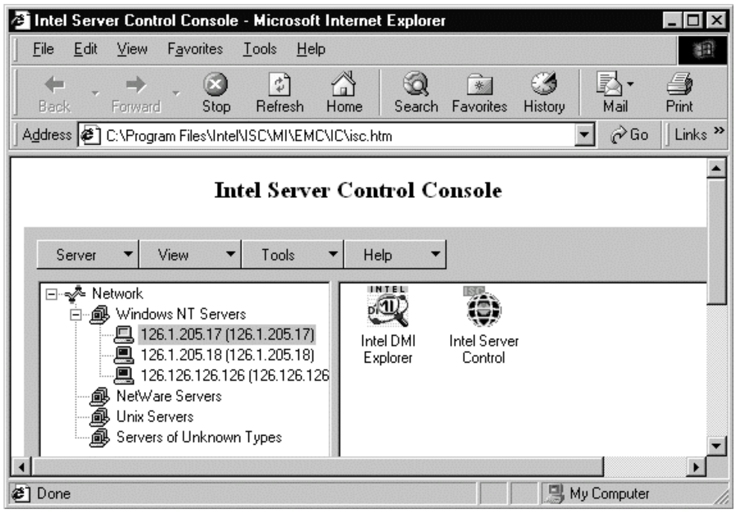
11. Enter the CIC Pro’s Unity Network MC IP address located on the top front left side of the tower and select *OK*.

WARNING

Duplicate IP addresses will cause erratic communication and data loss! Be extremely careful not to assign the same IP address to two different devices.

---

12. After the IP addresses appear, select *Server*. Scroll down and select *Stop Discovery* and “*Yes*”.



Intel Server Control Console - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print
Address C:\Program Files\Intel\ISC\MI\EMC\IC\isc.htm
Go Links
Intel Server Control Console
Server View Tools Help
Network
Windows NT Servers
126.1.205.17 (126.1.205.17)
126.1.205.18 (126.1.205.18)
126.126.126.126 (126.126.126
NetWare Servers
Unix Servers
Servers of Unknown Types
Intel DMI Explorer
Intel Server Control
Done
My Computer

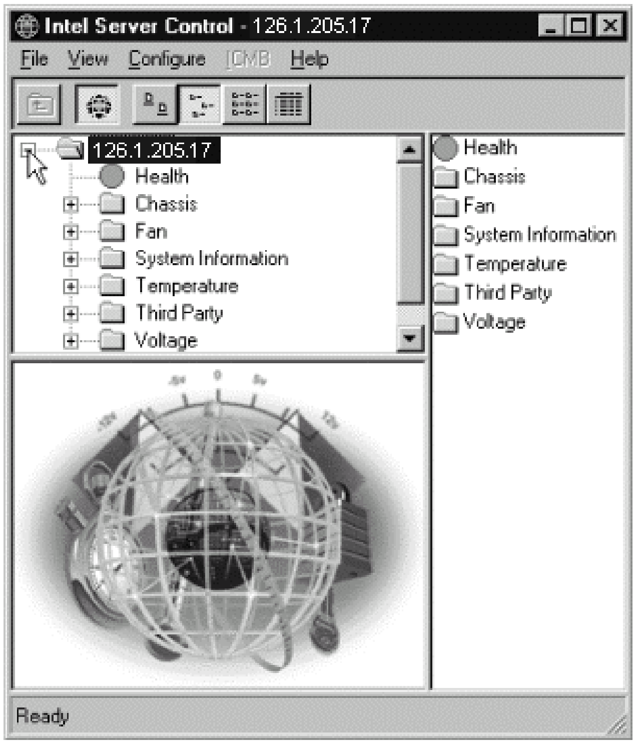
13. Double click on *Windows NT Servers* to expand the list of servers found.

14. Click on the IP address from the list that corresponds to your CIC Pro and the Intel Server Control icon appears on the right.

NOTE

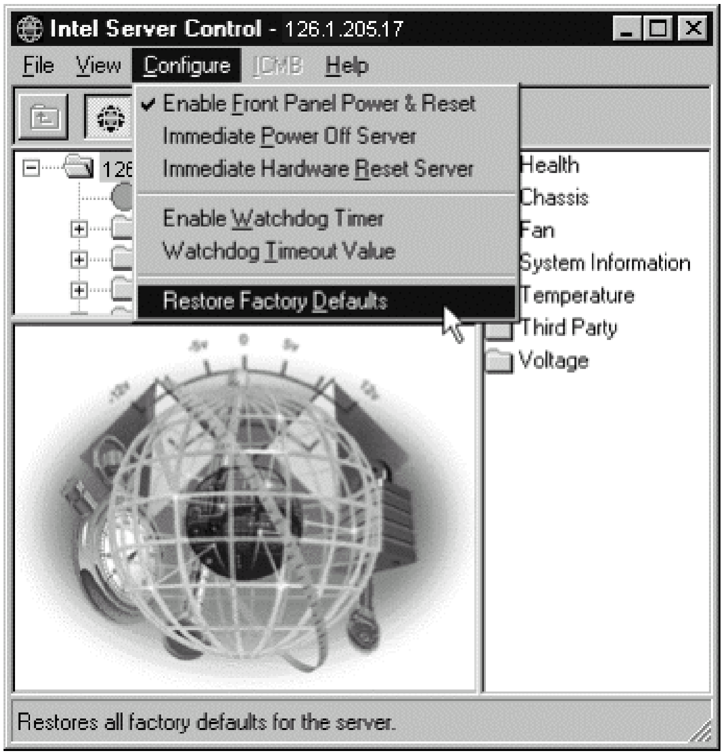
If you see only address **126.126.126**..., and not your IP address, repeat step 9.

15. Double click on the “Intel Server Control” icon and the following window appears.


Intel Server Control - 126.1.205.17
File View Configure ICMB Help
126.1.205.17
Health
Chassis
Fan
System Information
Temperature
Third Party
Voltage
Ready

16. Wait till the *Ready* message appears in the bottom left corner then double click on your IP address folder to expand it and verify that the “*Health*” button is Green.

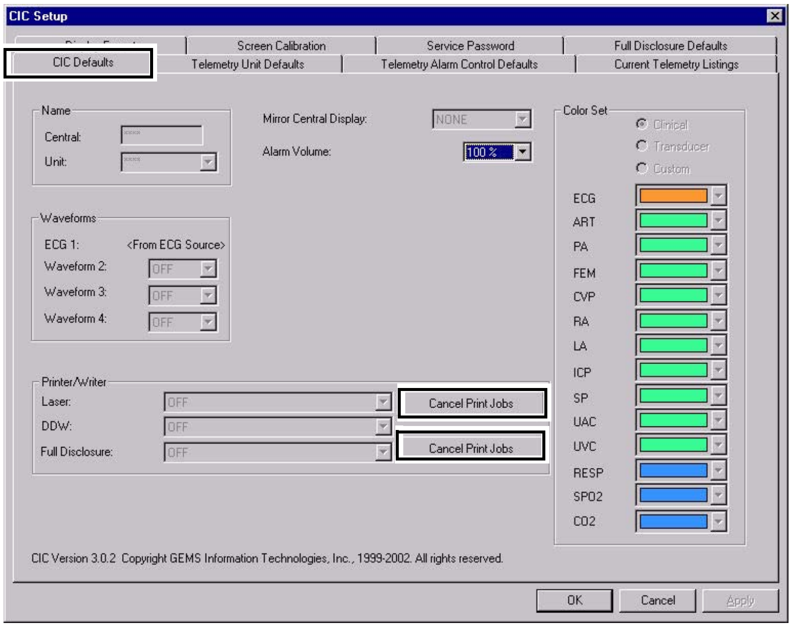
17. Click on *Configure* at the top pull-down menu.


Intel Server Control - 126.1.205.17
File View Configure ICMB Help
✓ Enable Front Panel Power & Reset
Immediate Power Off Server
Immediate Hardware Reset Server
Enable Watchdog Timer
Watchdog Timeout Value
Restore Factory Defaults
Health
Chassis
Fan
System Information
Temperature
Third Party
Voltage
Restores all factory defaults for the server.

18. Click on *Restore* then select “*Yes*” at the confirmation window.
19. Wait at least five minutes the select *Start* > *Shut Down* > *Shut Down the Computer*.
20. When the message “*It is safe to turn off your computer*” appears, press the power button on the front of your computer tower and wait for about two minutes.
21. Press the power button again and allow the system to power up normally. The restore defaults process is now complete.

Canceling CIC Pro Print Jobs

Use the following procedure to cancel a print job from a CIC Pro:


CIC Setup
Screen Calibration
Service Password
Full Disclosure Defaults
CIC Defaults
Telemetry Unit Defaults
Telemetry Alarm Control Defaults
Current Telemetry Listings
Name
Waveforms
Printer/Writer
Color Set
Cancel Print Jobs
Cancel Print Jobs
OK
Cancel
Apply

Central: ****
Unit: ****
Mirror Central Display: NONE
Alarm Volume: 100 %
ECG 1: <From ECG Source>
Waveform 2: OFF
Waveform 3: OFF
Waveform 4: OFF
Laser: OFF
DDW: OFF
Full Disclosure: OFF
● Clinical
○ Transducer
○ Custom
ECG 🟧
ART 🟩
PA 🟩
FEM 🟩
CVP 🟩
RA 🟩
LA 🟩
ICP 🟩
SP 🟩
UAC 🟩
UVC 🟩
RESP 🟦
SPO2 🟦
CO2 🟦

CIC Version 3.0.2 Copyright GEMS Information Technologies, Inc., 1999-2002. All rights reserved.

1. Select *CIC Setup* at the bottom of the screen.
2. Click on the *CIC Defaults* tab.
3. Click the appropriate *Cancel Print Jobs* button.

NOTE

This only cancels print jobs that originate from the same CIC Pro. You cannot cancel print jobs at another CIC Pro server.

Capture All Logs on the CIC Pro

Use the Get All Logs Tool

NOTE

Alternately, for CIC Pro Version 4.0.x and later, the Webmin utility can be used to access log files instead of the Get All Logs tool described in this section. Refer to "Download Logs" on page 7-11.

Introduction

In an attempt to diagnose a problem, Field Service personnel are frequently called on to collect log files created by various software applications, such as CIC Pro and ApexPro. In addition, Windows NT provides an Event Log facility that records NT-related system information, and a utility called Dr. Watson records information in the event of an application crash. All of these files might need to be gathered and sent to Engineering for analysis.

This section describes a tool that simplifies log file collection. This tool lets the user select all log files from a Windows program, and then compresses them all into a small ZIP archive file.

The following steps describe how to capture the log files using the Get All Logs program.

Operation

This section describes how to operate the Get All Logs program. This program archives associated log files.

The bed displayed at this CIC Pro is unmonitored while the CIC Pro is stopped. Any ApexPro beds admitted on this CIC Pro PC display "NO COMM" if displayed at other centrals and are not monitored.

Stopping the CIC Pro Application

You must stop the CIC Pro application for the log capture tool to run reliably. Stop the CIC Pro application in the normal manner.

It is also necessary to "Close all programs and log on as a different user" from Window's start button. To run the program log, in as user "administrator" from Window's login screen. Recall that to get the login screen to come up you have to hold down the shift key while Windows starts.

1. Select Setup CIC.
2. Select the Service Password tab.
3. Type mms_com as the Password.
4. In the command box that opens, type stop then press Enter.
5. Click on Start then select Shut Down and Close All Programs And Log On As Different User.
6. Hold down Shift and select Yes.

Continue to hold the key until prompted for the password.

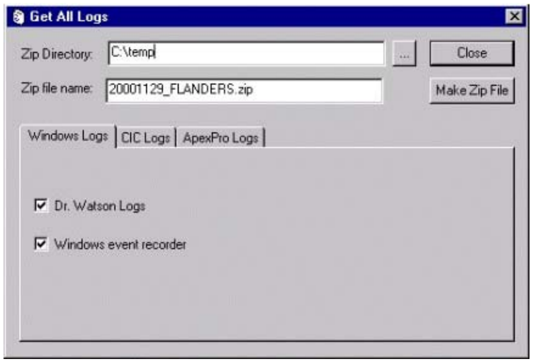
7. Type “administrator” as the User name and “admin1,3,5,7” as the Password then press Enter.

Starting the Get All Logs Tool

After you are logged in as user “administrator”, get into an “NT Command Prompt” window. On CIC Pro version 2.2 or greater, GetAllLogs is located at the c:\Program Files\Marquette\x.x directory. At this directory type:

GetAllLogs <Enter>

The program should load and the following window should appear as shown in the Get All Logs startup window below.



Zip Directory: C:\temp

Zip file name: 20001129_FLANDERS.zip

☑ Dr. Watson Logs

☑ Windows event recorder

Selecting the ZIP directory and file name

The directory that the ZIP file writes to displays next to the Zip Directory: label, as shown in the Get All Logs startup window. Press the Browse button “…” to select another directory to write to. The default value is C:\temp.

The ZIP file name displays next to the Zip file name: label, as shown in the Get All Logs startup window. The default file name consists of the Year/Month/Date plus the NT machine name. In most cases, there is no need to change this name.

From the example shown in the Get All Logs startup window, the ZIP file writes to:

C:\temp\20001129_FLANDERS.zip

Selecting the Windows NT Logs

Use the Windows Log tab (see the Get All Logs startup window) to configure which Window NT logs are stored in the ZIP file.

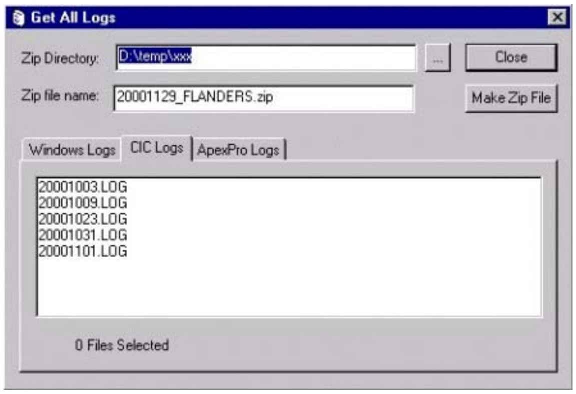
“Dr. Watson” log files are included when you check the Dr. Watson Logs label.

Windows NT event log files are included when the Windows event recorder label is checked.

In most cases check both of these items.

Selecting the CIC Pro Logs

Use the CIC Logs tab to configure which CIC Pro logs are stored in the ZIP file.

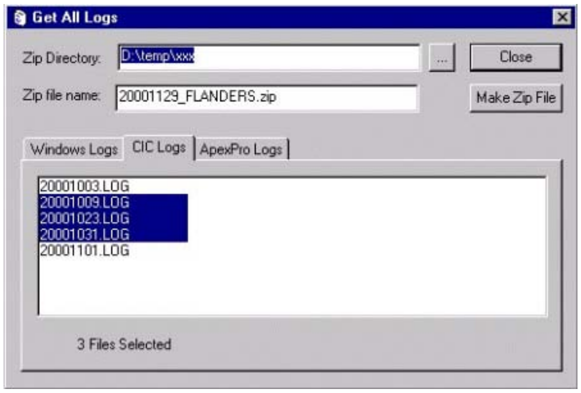

Get All Logs
...
Close
Make Zip File
Windows Logs
CIC Logs
ApexPro Logs

Zip Directory: D:\temp\xxx
Zip file name: 20001129_FLANDERS.zip

```
20001003.LOG
20001009.LOG
20001023.LOG
20001031.LOG
20001101.LOG
```

0 Files Selected

The CIC Pro log files are named after the date they are created. Click on the files that should be archived in the ZIP file. Three files were selected as shown below.


Get All Logs
...
Close
Make Zip File
Windows Logs
CIC Logs
ApexPro Logs

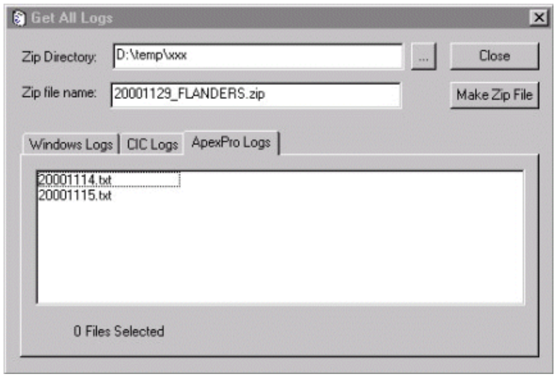
Zip Directory: D:\temp\xxx
Zip file name: 20001129_FLANDERS.zip

```
20001003.LOG
20001009.LOG
20001023.LOG
20001031.LOG
20001101.LOG
```

3 Files Selected

Selecting the ApexPro Logs

The Apex Pro Logs tab (see figure below) can be used to configure which ApexPro logs are to be stored in the ZIP file.

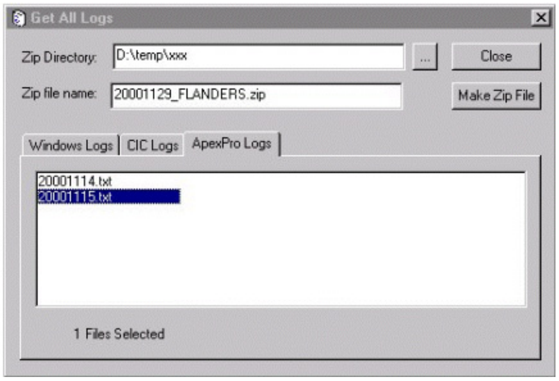

Get All Logs
...
Close
Make Zip File
Windows Logs
CIC Logs
ApexPro Logs

Zip Directory: D:\temp\xxx
Zip file name: 20001129_FLANDERS.zip

```
20001114.txt
20001115.txt
```

0 Files Selected

The ApexPro log files are named after the date they are created. Click on the files to archive in the ZIP file. One file was selected as shown in the figure below.



Zip Directory: D:\temp\xxx

Zip file name: 20001129_FLANDERS.zip

20001114.txt
20001115.txt

1 Files Selected

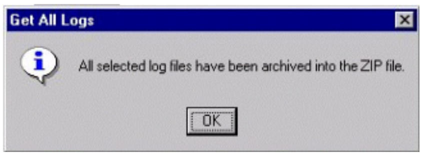
Creating the ZIP file

After you select all the files for archiving, press the *Make Zip File* button. This initiates the procedures to create the ZIP file. If the GetAllLogs program is run from a floppy drive, it takes time for the program to complete.

CAUTION

If you configure the program to archive the Windows NT event logs, the warning dialog box (shown in the figure below) pops up to ask the user not to touch the mouse or keyboard while the script program is running. Please do NOT touch the mouse or keyboard while the script program runs. Doing so may confuse the script program.

After the program finishes creating the ZIP file that contains the archived log files, it displays the following informational dialog box.



All selected log files have been archived into the ZIP file.

Exiting the Program

Click on the Close button to exit the program.

Copying the ZIP file from the hard drive to a floppy drive

If the newly created ZIP file is smaller than 1.44MB, then it can be directly copied onto an empty floppy disk. Insert an empty floppy disk into drive A:, and then issue the following command from a Command Prompt. Using the directory and file name used throughout this example, the command would be:

```
copy<Space>C:\temp\20001129_FLANDERS.zip<Space>a:\
```

If the newly created ZIP file is larger than 1.44MB, it cannot fit on a single floppy. In that case, use the file splitting utility called FileSplit.exe. See “FileSplit” in this chapter.

FileSplit

Use “FileSplit” to break a large file up into smaller files as follows:

NOTE

> The FileSplit program provides several options regarding how to split up a file and where to place the resultant smaller files. Follow these directions to split up the file and copy the smaller files directly to floppy disks. Have a supply of formatted floppies available before you begin this procedure.

1. Change the directory to
   “\Program Files\Marquette\CIC\<CIC Pro version>”
   where “<version>” is the software version string (for example, “1.1”) of the currently running version of ApexPro.
2. Enter “filesplit”. The FileSplit utility window appears.
3. In the Source: box, you can enter the name of the (large) file being broken-up either manually or by clicking on the “…” button to the right of the Source: box.

   NOTE

   > When using the “…” button, the initial list of files only shows files with file extensions that pertain to log file types, i.e., “.txt” and “.log”. If necessary, change this by using the selection in the Files of type: specification box.

4. In the Target: box, type “A:/”. This writes the smaller files directly to the floppy drive.
5. Leave the Max split file size: selection at Limited only by space available. This ensures that all available space is used on each floppy written to.
6. Once all entries are correct, press the Copy button to begin the file split and copy process. A progress bar displays while it copies the files. When each floppy is full, a message box saying, Insert next disk appears. After you remove the full floppy, and insert a blank floppy, press the Retry button to continue.
7. After you copy all the small files to floppies, a message box saying File copy complete appears.

Duplicate TTX

The CIC Pro software does not allow you to enter duplicate transmitter TTX numbers when you admit a patient. Many problems could arise if two transmitters operating at the same frequencies are used in the telemetry system at the same time.

But there are circumstances where having duplicate transmitters is beneficial, such as troubleshooting a telemetry system. This situation can occur when multiple CD Telemetry-LAN cabinets or an ApexPro telemetry system has a failure. The easiest method to continue coverage of the patients that were on the failed cabinet is to move them to open receivers on other telemetry cabinets.

But since the CIC Pro software won’t allow duplicate TTX numbers in the system, it is impossible to admit the transferred patients. This option overrides the software to allow duplicate TTX numbers. You can then admit the patients to open receivers on the other central stations.

Once you enable this option you have five minutes to admit the patients to the CIC Pro system. Once the 5-minute period expires the software again prevents the admission of patients with duplicate TTX numbers.

The admitted patients with duplicated TTX numbers have an indication shown on the CIC Pro display that identifies them. This helps to identify the transferred patients when the failed telemetry cabinet is repaired. You can then discharge these patients and return them to the repaired telemetry cabinet.

The normal state for this option is NOT ALLOWED.

This function is enabled/disabled via the command **setflags** invoked from the Windows NT Command Prompt window.

1. Use the mouse to select *Setup CIC* at the bottom of the screen.
2. From the *CIC Setup* screen, select the *Service Password* tab.
3. At the service password prompt type **mms_com** and press **Enter**.

   This enables the *Service Menu* and displays a command prompt window.

   setflags<Space>-dup<Space>on and press **Enter** to allow duplicate TTX).
   setflags<Space>-dup<Space>off and press **Enter** to turn off duplicate TTX).

   NOTE

   Once you select this option you have five minutes to enter the duplicate TTX numbers. If that is not enough time simply select this option again and continue entering TTX numbers.

During the five minute period you can admit patients with TTX numbers that are duplicates. You also can change admission information during this time.

List Network

The list network function provides a list and summary of all devices that are communicating over the network.

The list network function is invoked from the Windows NT Command Prompt window.

1. Use the mouse to select *Setup CIC* at the bottom of the screen.
2. From the *CIC Setup* screen, select the *Service Password* tab.
3. At the service password prompt type **mms_com** and press **Enter**.

   This enables the *Service Menu* and displays a command prompt window.

   To invoke list network, enter the following command:

   Example: **lw<Space>-d** and press **Enter**.

   lw [-d] [-s] [-u] [-a] [-l] [-c] [-q] [-h], where:

   -d <device> limits the search to <device> device types

   -s <service> limits the search to devices offering <service>

   -u <unit> limits the search to devices in <unit>

-a <IP:port> limits the search to devices which have <IP:port>

A “?” within any search string matches any character

-l lists resource matches

-c print a summary count of search results

-q suppress printing of search criteria summary

-h presents help screen

A typical listing would include the following data.

List Network				
IP Address	Device Type	Secondary Address	Care Unit: Device Name	Patient Name
126.0.17.206	TELE TOWER	(2000)	“SICU: TOWR7e0011	
126.0.17.206	TELE BED	(2001)	“SICU:214-A”	“JACKSON”
126.0.6.77	TRAMSCOPE	(2000)	“ICU:BED1”	“HUNTER”
126.0.6.61	TRAMSCOPE	(2000)	“ICU:BED4”	“BLAND”
126.0.177.21	CENTRAL	(2000)	“ICU:CS4”	

IP Address – Uniquely identifies each device on the network, whether the devices are manufactured by GE Medical Systems *Information Technologies* or are part of the hospital information system.

Device Type - Includes:

CENTRAL: Centralscope central station

MONITOR: Eagle, Solar, Tramscope monitors

MRT2: Monitoring Review Terminal 2

MUSE: MUSE system

TELE BED: Telemetry bed, CD, or APEX

TELE TOWER: Telemetry cabinet

Secondary Address – Identifies telemetry receivers in the cabinet assembly. Ignoring the base 2000 number, the last digit indicates which receiver is related to each telemetry bed. Identifies the receivers by numbers in the cabinet assembly.

Care Unit: Device Name – Identifies the device in terms more understandable to the user.

Patient Name – Identifies the patient currently being monitored.

Open RTERM Session

The remote terminal (RTERM) capability operates in a manner very similar to having a terminal physically connected to a remote device except that the CIC Pro system is functioning as a terminal and it is using the network to connect to the other devices.

NOTE

You cannot use this function to log into another CIC Pro. It only allows you to log into CD Telemetry-LAN Cabinets or Centralscope Central Stations.

WARNING

Using the RTERM session option can cause other central stations to lose monitoring functions, patient data, or even the operating software. Only trained service personnel should use this option.

To invoke the RTERM function from the *Windows NT Command Prompt* window:

1. Use the mouse to select *Setup CIC* at the bottom of the screen.
2. From the *CIC Setup* screen, select the *Service Password* tab.
3. At the *service password* prompt type **mms_com** and press **Enter**.

   This enables the *Service Menu* and displays a command prompt window.

   To invoke RTERM, enter the following command:

   rterm “UNIT|CENTRAL”

   where UNIT|CENTRAL is the fully specified UNITY Network device name.

Description of this option is beyond the scope of this manual. Specialized training in service monitor-level troubleshooting is necessary before you use this option. Consult with GE Medical Systems *Information Technologies* Service for information about the advanced training.

Copying CDT LAN Telemetry Logs From CIC Pro

To retrieve TELE Tower error log files from the CIC Pro:

1. Use the mouse to select *Setup CIC* at the bottom of the screen.
2. From the *CIC Setup* screen, select the *Service Password* tab.
3. At the *service password* prompt type **mms_com** and press **Enter**. This enables the *Service Menu* and displays a command prompt window.
4. Insert a formatted 1.4Meg disk into drive A. Type **rterm<Space>"UNIT|TOWER"** and press **Enter**.

   Example: rterm “MEI|TOWER1”

5. Type **CD LOG** and press **Enter** to change to the log directory.
6. Type **COPY *yyyymmdd*.LOG FL0:\*yyyymmdd*.LOG**

   (Where *yyyymmdd* is the date of the desired log to copy with *YEAR*, *MONTH* and *DAY.)*

   This copies the log to the diskette in the CPU’s drive (FL0:\)

ApexPro Application Log Files

ApexPro logs are located in the *c:\Program Files\Marquette\PTS\Log* directory**.**

The Get All Logs utility is used for extracting ApexPro application, as well as other, log files. See “Use the Get All Logs Tool” on page 8-19 for more information.

Additionally, ApexPro log files can be copied from the CIC Pro as follows:

Log files are kept by most devices on the Unity Network MC network.

The CIC Pro log files are located in the following directory:

\Program Files\Marquette\CIC\Log

The naming convention for the log files is as follows:

yyyymmdd.log

For example: 20020422.txt is the log file for April 22, 2002. There is one log file per day. A maximum of 60 logs files are maintained.

File Handling

General

In an attempt to diagnose a problem, Field Service personnel are frequently called on to collect log files created by various software applications, such as CIC Pro and ApexPro. In addition, Windows NT provides an Event Log facility that records NT-related system information, and a utility called Dr. Watson records information in the event of an application crash. All of these files might need to be gathered and sent to Engineering for analysis. In addition, all of these files can be quite large; easily more than the 1.44 megabyte limit on a floppy disk.

Towers, ApexPro and CIC Pro

All monitoring devices on the GE Unity Network periodically broadcast information about themselves in “RWHAT” packets. These packets contain each device’s IP address and port number, name, and offered services, among other things. In addition, all monitoring devices listen for such packets, and maintain a database of information about all other devices on the network. When one device needs to communicate with another device, this database is used to obtain the remote device’s IP address. Unity Network-protocol messages are created, and the device’s operating system services are used to transmit the message on the Unity Network.

When a CIC Pro wants to communicate with a CDT-LAN tower, for example, it retrieves the CDT-LAN tower’s IP address from its RWHAT database, creates Unity Network messages, and requests that the Windows NT operating system on its PC send them to the CDT-LAN tower. A CDT-LAN tower is a separate piece of hardware, connected to the same Unity Network as the CIC Pro.

ApexPro software can also be loaded and executed on the same server along with CIC Pro. Within Windows NT on such a system, two IP addresses are assigned to the (one) Unity Network card. The CIC Pro software is configured to use one, and the ApexPro software is configured to use the other. The ApexPro software transmits its RWHAT packets with its IP address, and the CIC Pro transmits its RWHAT packets with its IP address. Thus, to any device on the Unity Network, the CIC Pro and ApexPro systems, although running on the same PC, have different IP addresses. It’s impossible to determine whether those two pieces of software are running on the same or different server PCs.

When a telemetry system is connected to such a PC (via a third network card), an ApexPro “tower” results. When a CIC Pro wants to communicate with an ApexPro tower, it retrieves that ApexPro tower’s IP address from its RWHAT database, creates Unity Network messages, and requests that the Windows NT operating system on its server PC send them to the ApexPro tower. If the ApexPro tower is “on” the same server PC, Windows NT realizes this and passes the Unity Network message to ApexPro without sending it onto the Unity Network; it’s merely routed internally using Windows NT services. If it’s “on” a different PC, Windows NT routes the message onto the physical Unity Network.

Thus, an ApexPro “tower” is composed of a server PC (which could be running other software), the ApexPro software running on that PC, and a separate receiver rack, attached to the PC by a network connection.

Admit/TTX Master

When a reference is made to the “Admit Master,” it is referring to the part of the master software that controls telemetry patient admissions. When reference is made to the “TTX Master,” it is referring to the part of the master software that maintains the list of all in-use transmitters on all telemetry towers (both CDT-LAN and ApexPro) on the Unity Network. If reference is made to the “master tower,” it’s probably just referring in a generic way to the tower itself.

One telemetry tower is the “Admit/TTX Master” on the Unity Network. This tower has two specific duties:

- It receives all telemetry patient admit requests and directs them to appropriate ApexPro or CDT-LAN towers and
- It maintains a list of all in-use transmitter numbers, so that patient admissions can be prevented from using an already-allocated transmitter.

Each telemetry tower, whether ApexPro or CDT-LAN, monitors the network to determine if it has the highest IP address. If so, it assumes the duties of the Admit/TTX Master. On a mixed network, where both ApexPro and CDT-LAN towers are present, we require CDT-LAN towers to run Version 6 software. This software recognizes when an ApexPro tower is on the network; in such a case, a CDT-LAN tower does not become the master tower, even with the highest IP address. Each ApexPro tower checks only other ApexPro towers for the highest IP address. Thus, these two pieces of software work together to ensure that an ApexPro tower is the master on a mixed network.

In a CDT-LAN-only system, a CDT-LAN tower is obviously the Admit Master. A CDT-LAN Admit Master, admitting to a CDT-LAN tower, performs the admit operation in the same manner as an ApexPro Admit Master, when it receives a CDT-LAN admit request.

Telemetry Towers, Receivers, and Unit Names

In order to control receiver utilization at patient admission, both CDT-LAN and ApexPro systems allow qualified personnel to configure the receivers in each tower.

CDTLAN Receiver Configuration

The basic CDT-LAN systems have no receiver unit assignments; that is, a receiver can accept an admission for a patient in any unit. However, each receiver in a CDT-LAN tower can be assigned to a specific care unit. When this is done, it tells the admit master that the receiver should only be sent admit requests for patients in that unit. (The admit master actually sends the admit request to the receiver’s *tower*.) Receivers are assigned unit names using the “modify unit” terminal monitor command.

Additionally, each CDT-LAN tower has a service-entered list containing all the unit names that the tower accepts admissions from. This allows control of admissions when multiple antenna fields are present with only one Unity Network. If the list is empty, the tower accepts an admissions for any unit. When an admit request comes in to a CDT-LAN tower, the request’s unit name is checked against this list. If the list is empty or contains the unit name in the admit request, it processes the admit.

ApexPro Receiver Configuration

As in CDT-LAN, basic ApexPro systems have no receiver unit assignments; that is, a receiver can accept an admission for a patient in any unit. However, individual receivers are not assigned unit names as in CDT-LAN, but you can configure the units from which an ApexPro tower's receivers accept admits. Each ApexPro tower contains a list of unit names, along with how many receivers should be reserved to each unit. As unit names are assigned a number of receivers, the number of unassigned receivers in the tower decrements by that same count. If this count is greater than zero after all desired units have been entered into the list, the tower has "unassigned receivers" available. Unit names are assigned some number of receivers using the "modify receiver" PTSCONFIG command. Refer to the service or configuration documentation for your specific ApexPro installation for more information about the PTSCONFIG command.

Also associated with each unit in the list is an indication whether admits to this unit can use unassigned receivers. This item is entered for each unit name in the list. If a unit's "use-unassigned-receivers" flag is "yes", admits to the unit can use not only the number of explicitly assigned receivers, but any discharged, unassigned receivers. If a unit's "use-unassigned-receivers" flag is "no", the unit can only use the number of receivers allocated for it, and no more.

Any unit's reserved receiver count can be zero; a unit with a count of zero has no receivers explicitly assigned to it. This implies that the unit's "use-unassigned-receivers" flag must be "yes" for this unit to be able to admit to the tower. If no receivers need to be allocated to specific units, all units entered in the list can have their reserved-receiver counts set to zero, and their "use-unassigned-receivers" flag set to "yes."

If the list of unit names and their count of reserved receivers is empty (i.e., no unit names are entered), the ApexPro tower accepts admits from any unit. However, if *any* unit name is entered, *all* unit names (that the user desires to be admitted to this tower) must be entered.

Sequence of Events When Admitting a Patient

When any device on the Unity Network wants to admit a telemetry patient, it must send an admit request to the Admit Master. As was discussed earlier, there is one and only one master tower on the Unity Network. The tower that is the master broadcasts the Admit Master and TTX Master services in its RWHAT packets. By looking for these services in its RWHAT database, any Unity Network device can determine which tower is the master.

If any step along this path fails, the device that requested the admit is informed of the failure in a response packet sent back to it by the Admit Master.

Admit Master Receives the Admit Request

The admit master tower receives the admit request. The request is in the form of a Unity Network-protocol packet, which contains the desired unit name, bed name, patient name, transmitter number, graph location, and age group.

TTX Master Validation

Since the TTX Master and the Admit Master are on the same tower, the Admit Master uses local TTX Master services to ensure that the requested transmitter number is not in use by another patient. If it is, an error response indicating an in-use transmitter is returned to the device that requested the admit.

Admit Master Decision

The Admit Master decides which receiver or tower should be sent the actual admit command. When the Admit Master receives an admit request, it uses the transmitter number to determine which type of telemetry system to send the admit request to. If the number is between 1 and 960, it sends it to a CDT-LAN tower; if it's between 1000 and 9999, it sends it to an ApexPro tower.

CDT–LAN Admissions

CDT–LAN towers broadcast an RWHAT packet for all receivers, whether discharged or admitted. When the Admit Master wants to admit a CDT-LAN bed, it examines the RWHAT database, looking for a receiver offering the ADMIT service. The priority order used to pick a receiver is:

1. Discharged receiver with the same unit name as is contained in the admit packet.
2. Discharged universal receiver (unit name “mei”).

If neither of these is found, then an admit failure response is sent to the requesting device, indicating that no CDT–LAN receivers are available. If found, the admit request is sent to the selected receiver. Note that this is different than in ApexPro, where admit requests are sent to a selected tower, not a receiver.

In order to ensure that an admit/discharge/admit sequence does not continually use the same receiver, the Admit Master sequences CDT–LAN admissions through all available receivers. This ensures that if a particular receiver is bad, and the user discharges and then readmits a patient, that the second admit goes to a different receiver.

ApexPro Admissions

Every minute, each ApexPro tower on the network sends the Admit Master a list containing the names of units it can accept admits from, and whether the tower has an explicitly-names receiver available for that unit. The lists received from all towers are compiled into one master, receivers-available list, used when admitting a patient. After all allocated receivers for a particular unit on a tower have been admitted, the list still contains the unit name only if the unit was set-up to accept admits to unassigned receivers. The only time that a universal receiver (unit name “mei”) is sent in the list is if no unit names are entered for a tower (i.e., the tower accepts admits for any unit). This list has no individual receiver information in it; a unit's presence in the list only indicates that at least one receiver in the unit is available on the ApexPro tower.

When an ApexPro admit request is received by the Admit Master, it uses the following priority order to choose a tower to send the admit request:

1. A tower that has a receiver reserved for the unit name in the admit packet.
2. A tower that has a receiver available for the unit name in the admit packet, but not reserved. (This indicates that all receivers assigned to the unit are admitted, that the unit is configured to use unassigned receivers, and that an unassigned receiver is still available.)
3. A tower that has a universal receiver available (unit name “mei”).

If none of these is found, then it sends an admit failure response to the requesting device. This indicates that no ApexPro receivers are available. If found, the admit request is sent to the selected tower. Note that this is different than in CDT–LAN, where admit requests are sent to a receiver, not a tower.

In order to ensure that an admit/discharge/admit sequence does not continually use the same receiver, the Admit Master sequences ApexPro admissions through all available towers. Once an admit request is in a tower, the main ApexPro software determines which receiver to use, sequencing through all available receivers. This ensures that if a particular receiver is bad, and the user discharges and then readmits a patient, that the second admit goes to a different receiver, potentially on a different tower.

Troubleshooting the ApexPro System

NOTE

If applicable, see the separate service or configuration documentation for your specific ApexPro installation for more, or different, ApexPro troubleshooting information associated with your specific telemetry system.

ApexPro Troubleshooting Tips		
How to tell if the CIC Pro has the ApexPro option.	There are two ways to tell if the CIC Pro has the ApexPro option.	1. A unit with ApexPro has four IP address stickers on the top front of the tower. 2. A unit with ApexPro has a total of three network interfaces.
Explanation of how to enter *ptsconfig*.	Use this to help troubleshoot the system for other problems that may be seen.	1. At the CIC Pro with ApexPro that is connected to the telemetry system, click *Setup CIC*. 2. Select the *Service Password* tab. 3. Type the service password **mms_com.** 4. An MS-DOS command window opens displaying the prompt: *C:\Program Files\Marquette\CIC*\x.x> (x= software version) 5. Type **cd..** and press **Enter.** 6. Type **cd..** and press **Enter** again to get the prompt *C:\Program Files\Marquette*> 7. Type **cd pts\x.x** (*x*= software version) and press **Enter.** 8. Verify the prompt *C:\Program Files\Marquette\PTS*\x.x> (x= software version) 9. In the MS-DOS window at the *PTS*\x.x prompt, type **ptsconfig** and press **Enter.** NOTE Type **help** at any time to see a list of commands. 10. Verify new prompt, Unity Network MC IP address of the ApexPro application, then *C:Program Files\Marquette\PTS*\x.x.
How to identify what beds are admitted to the ApexPro telemetry system.	It may become necessary to shut down a CIC Pro with ApexPro. Use this to identify what telemetry beds are admitted to the CIC Pro w/ ApexPro before shutting down the PC. Notify nursing staff that these beds will go “NO COMM” during the reboot.	Enter *CIC Setup*, select *List current telemetry listings*. This list is pulled from the Admit Master showing the Unit|Tower name, Port #, Unit|bed* and TTX#. Use this command to help identify who is admitted to each PC tower. The UNIT|Tower name should be setup per the ApexPro configure section in this manual.
How does the system capture events and/or errors?	Error logs are captured and you can be either view or save them to a diskette for further evaluation. At the end of each day, log files are compressed and identified with a “.bfp” filename extension. “.bfp” files can be uncompressed by renaming files with the extension “.zip”, and opening with the WinZip file utility.	*Setup CIC*, Password **mms_com**, type **cd c:\program files\marquette\pts\logs**; type **dir** to see the logs for the past 60 days. The name of the file is the *yyyymmdd.log* ■ To view a log type: type **yyyymmdd.txt** |more <Enter> ■ To save a log to diskette, insert a formatted HD diskette in the floppy drive and type: copy YearMonthDay.log a: ■ If you cannot save a log file due to the size of the file, then utilize Wiz.exe to condense the file, see “FileSplit” on page 8-23 for details. Alternately, all ApexPro log files can be saved/downloaded at one time, using either the “Use the Get All Logs Tool” (see page 8-19), or the “Duplicate TTX” (see page 8-23).

ApexPro Troubleshooting Tips		
When admitting a patient, message of "No available receivers" is present.	All the receivers assigned to the CIC Pro's care unit name are already in use.	To see the assigned receivers per care unit, enter into ptsconfig and **type modify receiver** and press **Enter**. ■ Unassigned receivers = any care unit can admit to these receivers, this is the factory default. ■ Care unit names can be assigned or deleted depending on the need. Refer to the ApexPro configuration procedure for explanation of the Modify Receiver command.
Explanation of the 5 ApexPro colors from the command, setflags -mark ttx<Enter>	No waveform, only yellow tick marks for one patient.	1. Transmitter is out of range from the antenna system. 2. Transmitter may be programmed to a different TTX# than is labeled. Refer to *Transmitter Service Manual* to verify. 3. Transmitter is defective. Refer to the *Transmitter Service Manual* for troubleshooting the transmitter.
	Waveform mixed with yellow tick marks for one patient.	1. Transmitter is on the border of the antenna coverage area. 2. Transmitter is defective. Refer to *Transmitter Service Manual* for troubleshooting the transmitter. 3. Quad Receiver Module may be defective. Refer to *Receiver System Service Manual* for troubleshooting the receiver system. 4. Antenna system may be defective or improperly tuned. Refer to the *Site Survey and Installation Manual* for Troubleshooting guidelines.
	Waveforms mixed with yellow tick marks for multiple patients.	1. Antenna system may be defective or improperly tuned. Refer to the *Site Survey* and *Installation Manual* for Troubleshooting guidelines. 2. For up to 4 waveforms, a Quad Receiver Module may be defective. Refer to *Receiver System Service Manual* for troubleshooting the receiver system. 3. For up to 16 waveforms, a Receiver System may be defective. Refer to the *Receiver System Service Manual* for troubleshooting the receiver system.
	Dark Green tick marks. Missing data from the receiver.	The defective receiver should be identified by entering ptsconfig and use the command display patient UNIT|BED*. May also be helpful to use the blink command to physically identify the suspect bad receiver card. When in ptsconfig use the command blink patient UNIT|BED* 5. This allow the receiver status led to flash amber for 5 minutes for easy identification. Replace Quad receiver module assembly.
	Magenta tick marks. Missing data from the Receiver System.	1. Unity Network RX network cable has become disconnected. Try to ping the Receiver System by entering the CIC Pro Setup, Service password mms_com and type ping 119.1.1.1. If timed out, then the network connection has been lost. 2. Quad Receiver Module has become disconnected from the Receiver System. Power down the Receiver System to reseat the module. Upon Power up, verify the Quad Receiver Module initialized. Refer to the Receiver System manual for further details.
	Light Gray tick marks	The batteries in the transmitters are dead. Replace the batteries.

9 Assembly Drawings

For your notes

General

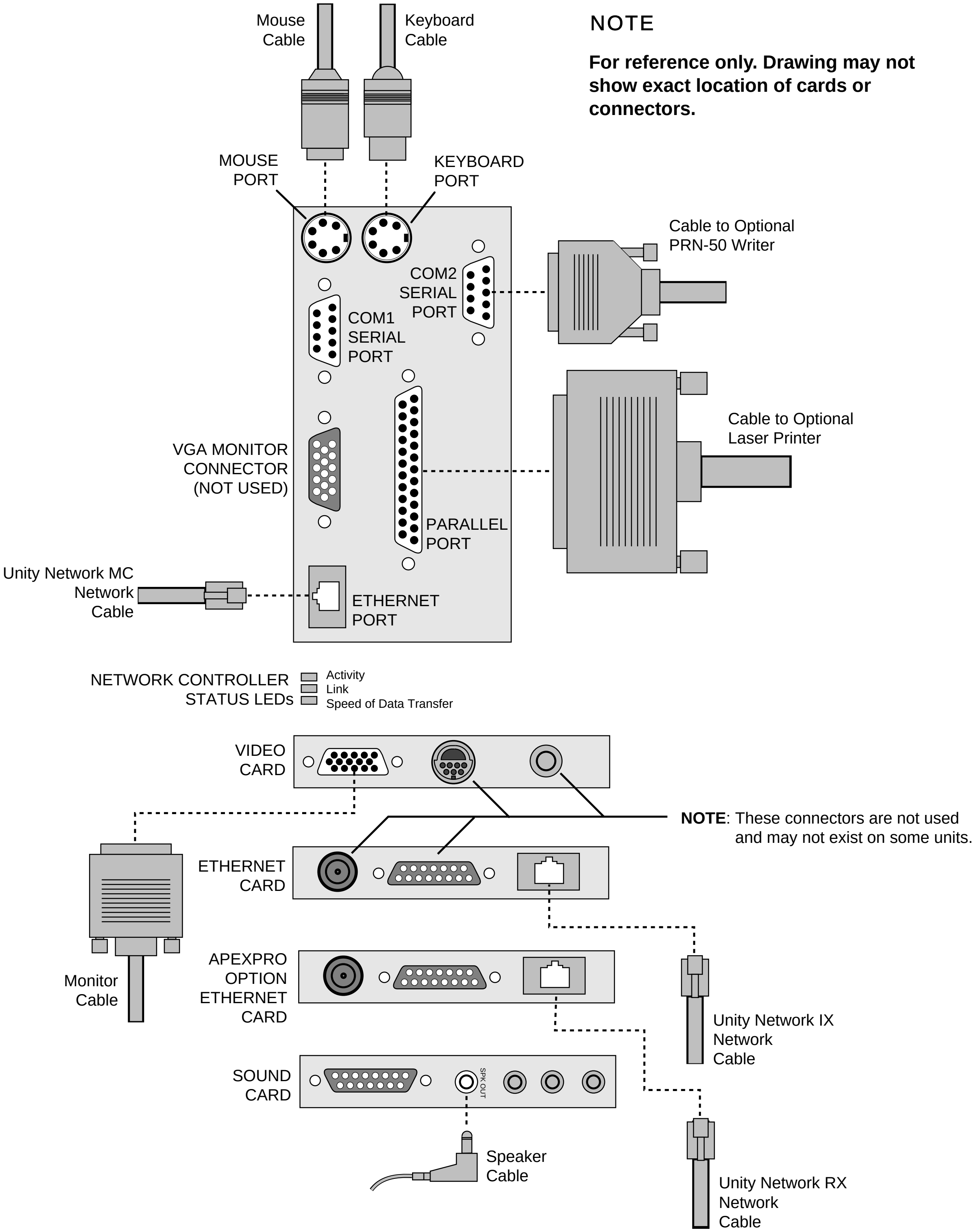
This chapter provides hardware connection diagrams and identification and ordering information for replacement parts. The CIC Pro server configuration can be further enhanced with the ApexPro telemetry option.

A system diagram and corresponding parts list is provided for each system configuration.

CAUTION
This assembly is extremely static sensitive and should be handled using precautions to prevent damage caused by electrostatic discharge.

Back Panel Connections

CIC Pro Nightshade Server


Mouse Cable
Keyboard Cable
MOUSE PORT
KEYBOARD PORT
Cable to Optional PRN-50 Writer
COM2 SERIAL PORT
COM1 SERIAL PORT
Cable to Optional Laser Printer
VGA MONITOR CONNECTOR (NOT USED)
PARALLEL PORT
Unity Network MC Network Cable
ETHERNET PORT
NETWORK CONTROLLER STATUS LEDs
Activity
Link
Speed of Data Transfer
VIDEO CARD
ETHERNET CARD
APEXPRO OPTION ETHERNET CARD
SOUND CARD
SPK OUT
Monitor Cable
Unity Network IX Network Cable
Speaker Cable
Unity Network RX Network Cable

NOTE

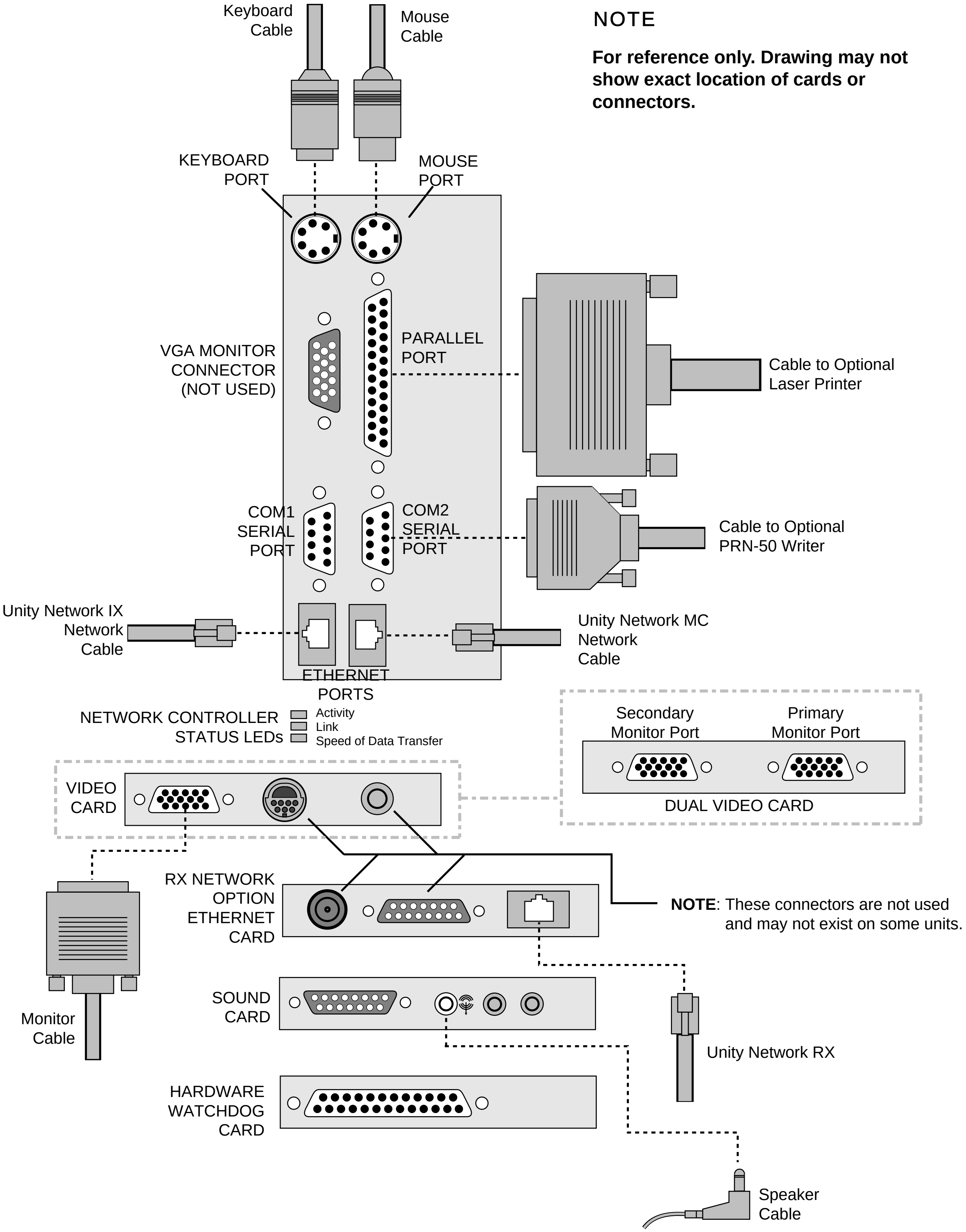
For reference only. Drawing may not show exact location of cards or connectors.

NOTE: These connectors are not used and may not exist on some units.

CIC Pro BCM Server

NOTE

For reference only. Drawing may not show exact location of cards or connectors.


Keyboard Cable
Mouse Cable
KEYBOARD PORT
MOUSE PORT
VGA MONITOR CONNECTOR (NOT USED)
PARALLEL PORT
Cable to Optional Laser Printer
COM1 SERIAL PORT
COM2 SERIAL PORT
Cable to Optional PRN-50 Writer
Unity Network IX Network Cable
Unity Network MC Network Cable
ETHERNET PORTS
NETWORK CONTROLLER STATUS LEDs
Activity
Link
Speed of Data Transfer
Secondary Monitor Port
Primary Monitor Port
DUAL VIDEO CARD
VIDEO CARD
RX NETWORK OPTION ETHERNET CARD
SOUND CARD
HARDWARE WATCHDOG CARD
Monitor Cable
Unity Network RX
Speaker Cable

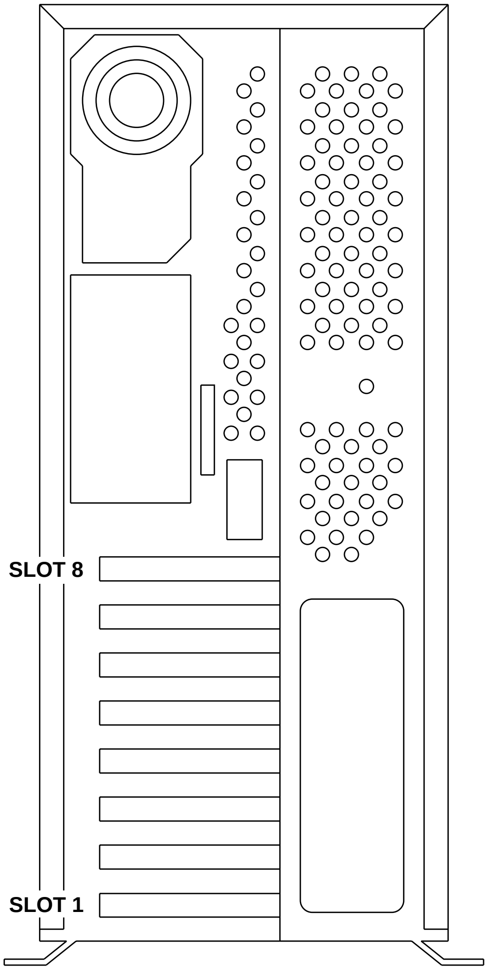
NOTE: These connectors are not used and may not exist on some units.

Server Tower

Nightshade Server

Use the chart below to associate software application and hardware with slot locations.

Software Applications **[Use Product BOM for actual items]**		**APEXPRO** 418779-009/010 2004294-002/003 ***418774-004*** 419805-002	**CIC Pro** 418779-008/012 2004294-001/004 ***418774-004*** 419805-002
Base PC: Intel S0NSCL0X0KSD - • N440BX Motherboard, Columbus II Chassis, 300 Watt Power Supply, Floppy Drive, Internal Cage/Rack, Filler Panels/Plates.			
• Integrated Ethernet connection		Labeling - [NET = MC] [I.P. = 126.x.x.x]	Labeling - [NET = MC] [I.P. = 126.x.x.x]
External Drives/Bays			
Front Top 5 1/4" Bay		N/A	N/A
Front Middle 5 1/4" Bay		N/A	N/A
Front Bottom 5 1/4" Bay		CD-ROM	CD-ROM
Cable Ribbon IDE (N440BX PCB: **J3G2** connector)		J3G2 to CD-ROM	J3G2 to CD-ROM
PC Case Slots (PCI, ISA, USB…etc.)			
Back Case Slot Plate (top), #8		N/A	N/A
Back Case Slot Plate #7		N/A	N/A
Back Case Slot Plate #6		N/A	N/A
Back Case Slot Plate #5 [PCI slot #4]		sound card	sound card
Back Case Slot Plate #4 [PCI slot #3]		NIC Labeling - [NET = RX] [I.P. = 119.1.1.1]	N/A
Back Case Slot Plate #3 [PCI slot #2]		NIC Labeling - [NET = IX] [I.P. = 121.x.x.x]	NIC Labeling - [NET = IX] [I.P. = 121.x.x.x]
Back Case Slot Plate #2 [PCI slot #1] , shared		Video card	Video card
Back Case Slot Plate #2 [ISA slot #2] , shared		N/A	N/A
Back Case Slot Plate (bottom), #1 [ISA slot #1]		N/A	N/A
Sound/Audio cable (Sound card to CD)		Remove - not used	Remove - not used
WOL cable (Wake On LAN)		Remove - not used	Remove - not used
CPU Additions (BIOS dependencies)			
CPU #1		Primary CPU Slot	Primary CPU Slot
CPU #2		Secondary Slot	N/A
CPU Processor Termination (1-CPU only)		N/A	Secondary Slot
CPU Fan cables, if applicable		#1: J6E1, #2: J8F1	J6E1

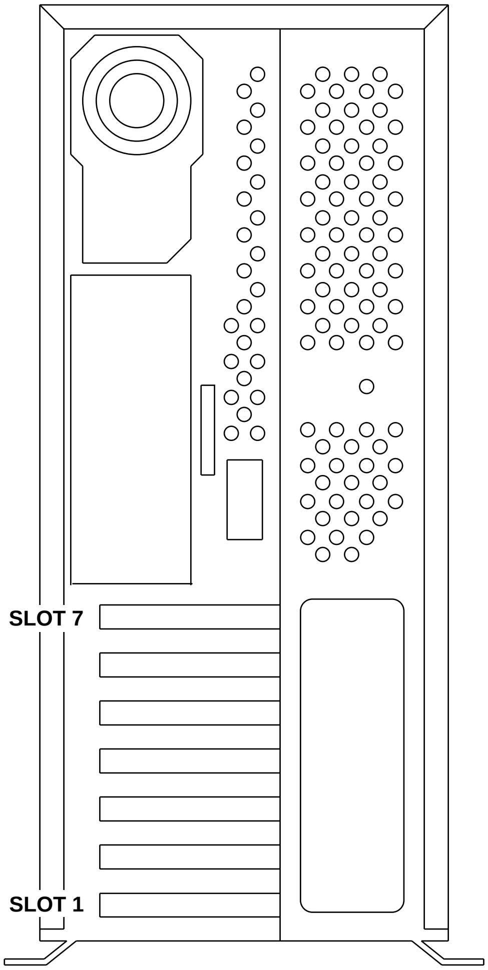


REAR VIEW OF TOWER

BCM Server

Use the chart below to associate software application and hardware with slot locations.

Software Applications **[Use Product BOM for actual items]**		**APEXPRO**	**CIC Pro**
Base PC: Intel S0NSCL0X0KSD - • I440BX Motherboard, Systium Chassis, 300 Watt Power Supply, Floppy Drive, Internal Cage/Rack, Filler Panels/Plates.			
• Integrated Ethernet connections		Labeling - [NET = MC] [I.P. = 126.x.x.x]	Labeling - [NET = MC] [I.P. = 126.x.x.x]
		Labeling - [NET = IX] [I.P. = 121.x.x.x]	Labeling - [NET = IX] [I.P. = 121.x.x.x]
External Drives/Bays			
Front Top 5 1/4" Bay		N/A	N/A
Front Middle 5 1/4" Bay		CD-ROM	CD-ROM
Front Bottom 5 1/4" Bay			
Front Top 3 1/2" Bay		3 1/2" Floppy Drive	3 1/2" Floppy Drive
Front Bottom 3 1/2" Bay			
Cable Ribbon IDE (I440BX PCB: **J3G2** connector)		J3G2 to CD-ROM	J3G2 to CD-ROM
Internal Drives/Bays			
Front Top Hard Drive Bay		Hard Drive	Hard Drive
Front Bottom Hard Drive Bay		N/A	N/A
PC Case Slots (PCI, ISA, USB…etc.)			
Back Case Slot Plate (top), #7		Video card	Video card
Back Case Slot Plate #6		NIC Labeling - [NET = RS] [I.P. = 1.1.1.2]	NIC Labeling - [NET = RS] [I.P. = 1.1.1.2]
Back Case Slot Plate #5 [PCI slot #4]		sound card	sound card
Back Case Slot Plate #4 [PCI slot #3]		Hardware Watchdog card	Hardware Watchdog card
Back Case Slot Plate #3 [PCI slot #2]		N/A	N/A
Back Case Slot Plate #2 [ISA slot #2] , shared		N/A	N/A
Back Case Slot Plate (bottom), #1 [ISA slot #1]		N/A	N/A
Sound/Audio cable (Sound card to CD)		Remove - not used	Remove - not used
WOL cable (Wake On LAN)		Remove - not used	Remove - not used
CPU Additions (BIOS dependencies)			
CPU #1		Primary CPU Slot	Primary CPU Slot
CPU #2		Secondary Slot	N/A
CPU Processor Termination (1-CPU only)		N/A	Secondary Slot
CPU Fan cables, if applicable		#1: J6E1, #2: J8F1	J6E1



REAR VIEW OF TOWER

CIC Pro System Block Diagrams

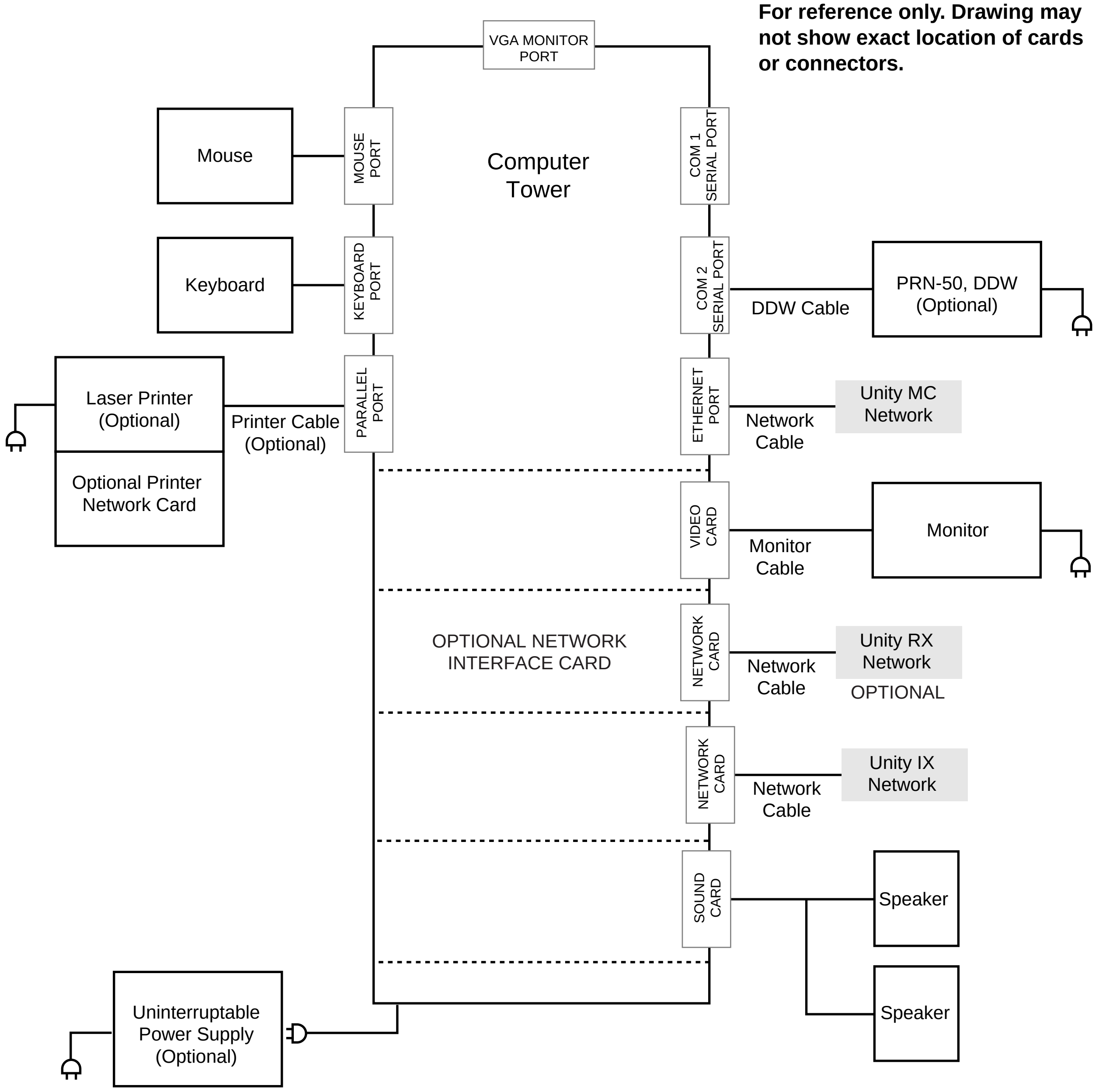
Nightshade Server

NOTE

When replacing an optional NIC (Network Interface Card), all bedside monitors need to be rebooted (turned off for 1 minute and then turned back on). This allows for proper communication between the CIC Pro and the bedsides.

NOTE

For reference only. Drawing may not show exact location of cards or connectors.


VGA MONITOR PORT
Mouse
MOUSE PORT
Computer Tower
COM 1 SERIAL PORT
Keyboard
KEYBOARD PORT
COM 2 SERIAL PORT
DDW Cable
PRN-50, DDW (Optional)
Laser Printer (Optional)
Optional Printer Network Card
Printer Cable (Optional)
PARALLEL PORT
ETHERNET PORT
Network Cable
Unity MC Network
VIDEO CARD
Monitor Cable
Monitor
OPTIONAL NETWORK INTERFACE CARD
NETWORK CARD
Network Cable
Unity RX Network
OPTIONAL
NETWORK CARD
Network Cable
Unity IX Network
SOUND CARD
Speaker
Speaker
Uninterruptable Power Supply (Optional)

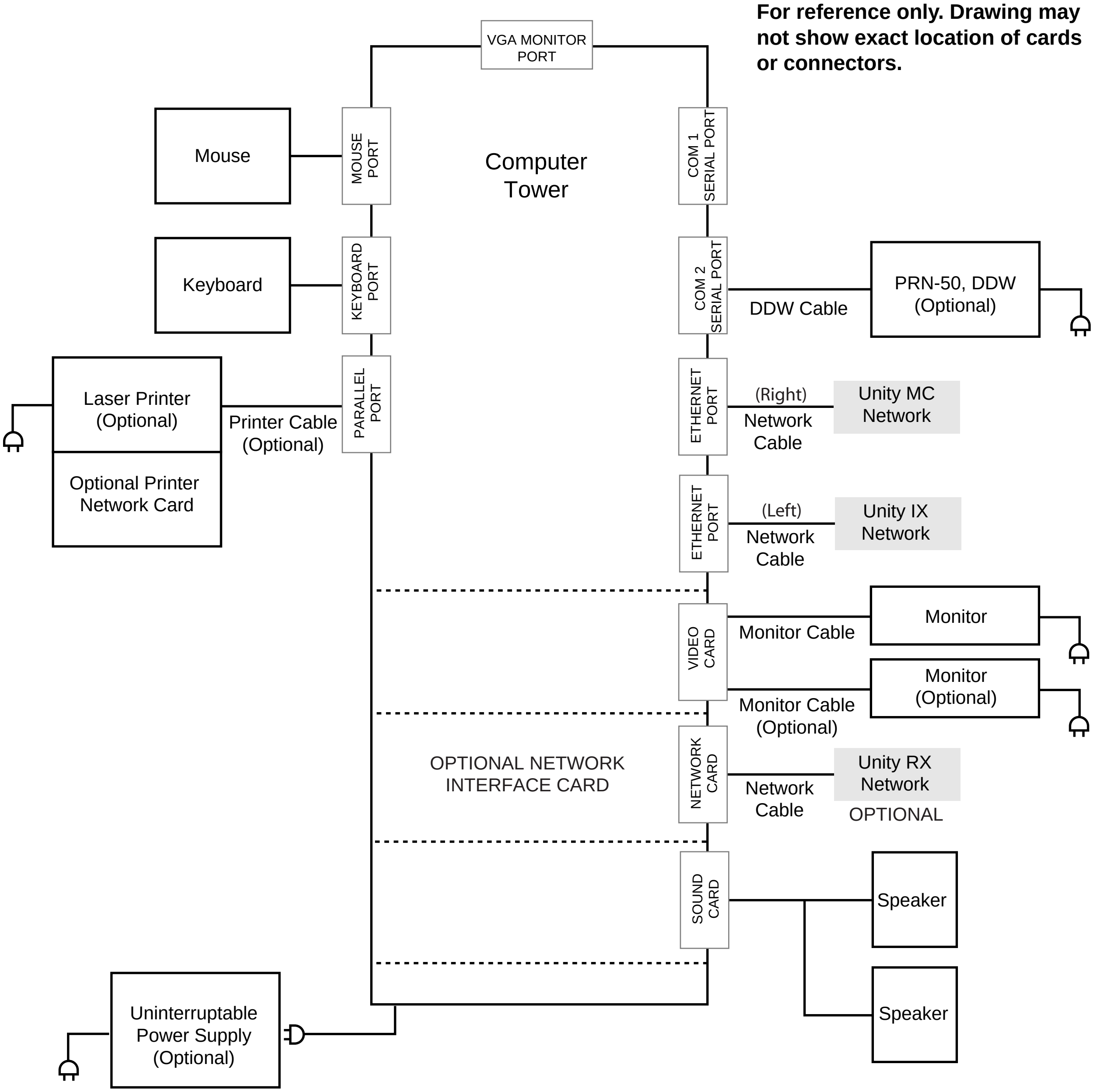
BCM Server

NOTE

When replacing an optional NIC (Network Interface Card), all bedside monitors need to be rebooted (turned off for 1 minute and then turned back on). This allows for proper communication between the CIC Pro and the bedsides.

NOTE

For reference only. Drawing may not show exact location of cards or connectors.


VGA MONITOR PORT
Computer Tower
Mouse
MOUSE PORT
Keyboard
KEYBOARD PORT
Laser Printer (Optional)
Optional Printer Network Card
Printer Cable (Optional)
PARALLEL PORT
COM 1 SERIAL PORT
COM 2 SERIAL PORT
DDW Cable
PRN-50, DDW (Optional)
ETHERNET PORT
(Right) Network Cable
Unity MC Network
ETHERNET PORT
(Left) Network Cable
Unity IX Network
VIDEO CARD
Monitor Cable
Monitor
Monitor Cable (Optional)
Monitor (Optional)
OPTIONAL NETWORK INTERFACE CARD
NETWORK CARD
Network Cable
Unity RX Network
OPTIONAL
SOUND CARD
Speaker
Speaker
Uninterruptable Power Supply (Optional)

CIC Pro Parts Lists

CIC Pro Nightshade Server

Item Number	Item Description	Qty
418774-926	INTEL N440BX SERVER BOARD WITH BIOS V14. DOES NOT INCLUDE: ■ 350MHZ PROCESSOR MODULES OR 2ND PROCESSOR TERMINATOR BD ■ MEMORY AND ADD ON CIRCUIT BOARDS	1
421948-001	BOXED INTEL PII 350MHZ/512 PROCESSOR WITH FAN ASSEMBLY.	1
421774-907	INTEL 300 WATT POWER SUPPLY	1
421948-001	SIMPLE TECHNOLOGY SDRAM DIMM 8X72 10NS 64MB (ST1728118UD1-10AVG)	2
418774-922	3.15” FLOPPY DISK DRIVE	1
200433-001	DISK DRIVE CDROM IDE 48X SONY (CDU482-110/10)	1
2009058-001	HARDRIVE WITH CIC AND APEXPRO SOFTWARE. NOTE: SPECIFY SOFTWARE VERSION WHEN ORDERING.	1
2001640-007	68P SCSI 5 CONN 3FT RIBBON INTERFACE CABLE W/TERMINATION.	1
418774-911	FRONT 120 MM FAN	2
420403-001	LOGITEC MOUSE	1
2001323-001	KOSS HDM/5 COMPUTER SPEAKERS	1
414582-103	3COM 3C905B-TX 10/100 MHZ FAST ETHERLINK XL PCI ETHERNET CARD RJ45	1
419819-002	ATI EXPERT 98 PCI VIDEO ACCELERATOR CARD; 8MB; HIGH RES: 2D 1600X1200 @75HZ W 16.7 MILLION COLORS; @ 85HZ W 65K COLORS; 3D 1280X1024 MILLION COLORS; 3D 1600X1200 65K COLORS. NOTE: CIC USES 1280X1024 @75HZ.	1
2005471-002	CREATIVE LABS CT4815 PCI SOUND BLASTER VIDEO CARD.	1
2004766-001	AC POWER CORD CLAMP KIT	1
2001263-001	BRACKET SPEAKER CONN CIC	1
45000-403	PH 4-40X3/16 SCREW	1
418836-003	MS WIN NT 4.0 DOMESTIC/INTL. LICENSE	1
This Additional Part with Full Disclosure Option		
2001640-005	SEAGATE TECH. ST318275LW 18GB ULTRA-2 SCSI DRIVE. NOTE: MUST USE A SCSI CABLE WITH BUILT IN TERMINATION.	1

CIC Pro BCM Server Field Replacement Units

Item Number	Description
2017715-002	CIC HARD DRIVE with RIBBON CABLE
2017715-003	CIC FLOPPY DRIVE
2017715-004	CIC CDROM DRIVE
2017715-005	CIC AUDIO CARD
2017715-006	CIC VIDEO CARD (SINGLE-OUTPUT)
2017715-016	CIC VIDEO CARD (DUAL-OUTPUT)
2017715-015	CIC WATCH-DOG CARD
2017715-007	CIC MB with DUAL PROCESSOR, HEAT SINK and MEMORY CARD
2017715-012	CIC MB with SINGLE PROCESSOR, HEAT SINK and MEMORY CARD
2017715-008	CIC NETWORK CARD
2017715-009	CIC SERVICE CPU HEAT SINK with FAN
2001323-001	SPEAKER COMPACT PASSIVE
2017715-013	CIC CHASSIS FAN
2017715-014	CIC POWER SUPPLY and POWER SWITCH with WIRE HARNESS

CIC Pro Keyboard Kit

Item Number	Description
2012217-001	KYBD KIT CIC PS-2 GERMAN
2012217-002	KYBD KIT CIC PS-2 FRENCH
2012217-003	KYBD KIT CIC PS-2 ITALIAN
2012217-004	KYBD KIT CIC PS-2 SPANISH
2012217-005	KYBD KIT CIC PS-2 SWE-FIN
2012217-006	KYBD KIT CIC PS-2 DUTCH
2012217-007	KYBD KIT CIC PS-2 JAPANESE
2012217-008	KYBD KIT CIC PS-2 CHINESE
2012217-009	KYBD KIT CIC PS-2 DANISH
2012217-019	KYBD KIT CIC PS-2 RUSSIAN
2012217-010	KYBD KIT CIC PS-2 NORWEGIAN
2012217-011	KYBD KIT CIC PS-2 BELGIAN
2012217-012	KYBD KIT CIC PS-2 SWISS

Item Number	Description
2012217-013	KYBD KIT CIC PS-2 SI/HR/YU/B
2012217-014	KYBD KIT CIC PS-2 ENG-UK
2012217-015	KYBD KIT CIC PS-2 ENG-US
2012217-016	KYBD KIT CIC PS-2 HUNGARIAN
2012217-017	KYBD KIT CIC PS-2 PORTUGUESE
2012217-018	KYBD KIT CIC PS-2 BRAZIL-PORTUGUESE

CIC Pro BCM Server

Item Number	Description
2001263-001	BRACKET SPEAKER CONN CIC
2004766-001	KIT AC POWER CORD CLAMP
2012217-XXX	KEYBOARD KIT (see CIC Keyboard Kit table)
422310-001	MOUSE PAD GE
2006550-001	ADAPTER DB9F TO RJ-45
418836-003	LIC MS WIN NT WS 4.0 DOM/INTL

PC Motherboard Settings

Nightshade Server Motherboard Jumper Settings

PC Motherboard Jumper Settings -

- All jumpers left in default state (see items in bold in the table below).
- Reference: OEM P/N 243701-002 (Ver. 2.0, April/99), Jumpers (section 1.4) -
  Enterprise Server Group
  Intel N440BX Server
  Technical Product Specification

Nightshade Jumper Settings

Jumper Block	Pins (default in bold)	What it does at system reset
J3 J2		
A. BMC Forced Update Mode	9-10, Normal 10-11, Program	System boots normally. System tries to update BMC firmware.
B. Chassis Intrusion Detection	5-6, Enable 6-7, Disable	Switch installed on chassis indicates when cover has been removed. Chassis intrusion switch is bypassed.
C. FRB Timer Enable	1-2, Enable 2-3, Disable	FRB operation is enabled (system boots from processor 1 if processor 0 fails). FRB is disabled.
D. Boot Block Write Protect	13-14, Protect 14-15Erase/Prog	BIOS boot block is write-protected. BIOS boot block is erasable and programmable.
E. Recovery Boot	9-10, Normal 10-11, Recovery	System attempts to boot using the BIOS stored in flash memory. BIOS attempts a recovery boot, loading BIOS code from a floppy diskette into the flash device. This is typically used when the BIOS code has been corrupted.
F. Password clear	5-6, Protect 6-7, Erase	Maintains the current system password. Clears the password.
G. CMOS clear	1-2, Protect 2-3, Erase	Preserves the contents of NVRAM. Replaces the contents of NVRAM with the manufacturing default settings.
J3 J1		
H. BMC boot block write protect	1-2, Protect 2-3, Erase/Prog	BMC boot block is write protected. BMC boot block is erasable and programmable.
J5B1		
I. WOL Enable	1-2, Disabled 2-3, Enabled	Disables Wake On LAN. If your power supply does not provide 0.8 A of +5 V Standby current, you must move the WOL Enable jumper to this position. Enables Wake On LAN.
J6 J2		
J. Speaker Option	1-4 3-4	External speaker Onboard speaker

CIC Pro BCM Server Motherboard Switch Settings

The following table provides a quick refer for the proper PC motherboard switch settings for the CIC Pro BCM server.

Product Codes:

- 3F = SN _ _**3F**_ _ _ _G
- 4T = SN _ _**4T**_ _ _ _G
- AA1 = SN **AA1** _ _ _ _ _ _ _ _ _ _

Switch – Setting						
S1	S2	S3	S4	S5	S6	S7
S1.1 OFF	S2.1 OFF	S3.1 ON	S4.1 OFF	S5.1 ON	S6.1 On	S7.1 Off
S1.2 OFF	S2.2 ON	S3.2 OFF	S4.2 OFF	S5.2 OFF	S6.2 Off	S7.2 Off
	S2.3 OFF	S3.3 OFF	S4.3 ON	S5.3 ON	S6.3 On	
	S2.4 ON	S3.4 OFF	S4.4 OFF	S5.4 OFF	S6.4 Off	
	S2.5 OFF	S3.5 ON	S4.5 OFF (3F) S4.5 ON (4T, AA1)			
	S2.6 ON	S3.6 ON	S4.6 ON			
	S2.7 OFF	S3.7 ON	S4.7 OFF			
	S2.8 ON	S3.8 OFF	S4.8 OFF			

Watchdog Board (Berkshire)		
Number	Position	Function
1	OFF	Relay #1 Temperature Mode (RTM)
2	OFF	Relay #1 Mode (R1M)
3	OFF	Relay #2 Mode (R2M)
4	OFF	Temperature Reset Enable (TRE)
5	ON	Power On Delay (POD)
6	OFF	Watchdog Delay Time #1 *
7	ON	Watchdog Delay Time #2 *
8	ON	Watchdog Delay Time #3 *

***** Watchdog allows arming 1 minute after power-up

The following tables specify the proper PC motherboard switch settings and switch control functions. Where necessary, an asterisk (*) indicates the proper switch setting for CIC Pro.

Host Bus Frequency			
Bus Frequency	S4.1	S4.2	S4.3
100 MHz	OFF	OFF	ON
133 MHz	OFF	OFF	ON

CPU Clock Frequency			
CPU Clock	PCI Clock	S4.4	S4.5
100MHz	33MHz	OFF	ON
133MHz	33MHz	OFF	OFF

CPU Type				
Processor	S5.1	S5.2	S5.3	S5.4
Pentium III (Coppermine)	ON	OFF	ON	OFF

On Board SCSI Active Terminal Resistor			
Channel	Switch	Auto	Always Enable
Channel A	S7.1	*OFF	ON
Channel B	S7.2	*OFF	ON

COM2 Mode (RS232)										
S2.1	S2.2	S2.3	S2.4	S2.5	S2.6	S2.7	S2.8	S3.1	S3.2	S3.3
OFF	ON	OFF	ON	OFF	ON	OFF	ON	ON	OFF	OFF

On Board VGA Enable		
Switch	Enable	Disable
S3.7	OFF	*ON

LAN1 / LAN2 Enable			
LAN	Swtich	Enable	Disable
LAN1	S1.1	*OFF	ON
LAN2	S1.2	*OFF	ON

KEYBOARD Password On		
Switch	Enable	Disable
S3.6	OFF	*ON

Clear CMOS Memory		
Switch	Clear	Normal
S3.4	ON	*OFF

BIOS Flash-able		
Switch	Enable	Disable
S3.5	*ON	OFF

Reserved		
Switch	Reserved	Reserved
S3.8	ON	*OFF
S4.6	*ON	OFF
S4.7	ON	*OFF
S4.8	ON	*OFF

Multiplier of CPU Frequency (Only for Intel CPU Engineer Sample)				
Multiplier	S6.1	S6.2	S6.3	S6.4
X2	ON	ON	ON	ON
X3	ON	OFF	ON	ON
X4	OFF	ON	ON	ON
X5	OFF	OFF	ON	ON
X2.5	ON	ON	OFF	ON
X3.5	ON	OFF	OFF	ON

Multiplier of CPU Frequency (Only for Intel CPU Engineer Sample)				
Multiplier	S6.1	S6.2	S6.3	S6.4
X4.5	OFF	ON	OFF	ON
X5.5	OFF	OFF	OFF	ON
X6	ON	ON	ON	OFF
X7	*ON	*OFF	*ON	*OFF
X8	OFF	ON	ON	OFF
Reserved	OFF	OFF	ON	OFF
X6.5	ON	ON	OFF	OFF
X7.5	ON	OFF	OFF	OFF
X1.5	OFF	ON	OFF	OFF
X0.5	OFF	OFF	OFF	OFF

A Technical Specifications

For your notes

Technical Specifications–CIC Pro

Due to continual product innovation, GE Medical Systems *Information Technologies* designs and specifications are subject to change without notice.

Performance Specifications (PC)

Performance Specifications	
Number of Patients	1 to 16 in standard display format, 1 to 17 in “view patient” format
Display Format	User selectable for up to 16 patients per display
Displayed Wavelengths	3.5 – 11 seconds, dependent on configuration choice
Display Information	Access to complete patient information including arrhythmia histories, graphic trends and tabular vital signs

Controls

- PS/2 keyboard
- PS/2 Mouse

Processing

	Main Processor	
	Nightshade	BCM
CIC Pro Basic	Intel Pentium II, 350 MHz (or faster)	Intel Pentium III, 850 MHz (or faster)
CIC Pro With ApexPro	Dual Intel Pentium II, 350 MHz (or faster)	Dual Intel Pentium III, 850 MHz (or faster)

Alarms

Alarms	
Patient Status Alarms	4 Levels: Crisis, Warning, Advisory and Message
System Alarms	2 Levels: Warning and Advisory
Notification	Audible, visual, graph runs, and history storage (dependent on level), alarm display button to view alarming beds
Display of Alarm Information	Alarm information located in waveform window, parameter box and alarm display buttons
Silencing	Current patient alarms silenced for 1 minute
Display of Limits	All parameter limits available

Recorder (optional)

- 2-inch external Direct Digital Writer
- Laser printer

General

General Specifications		
	Nightshade Server	BCM Server
Storage	128 MB RAM (256 MB RAM with ApexPro); 1.44 MB 3.5-inch floppy disk drive, CD-ROM drive, 9.1 GB hard drive (additional 18 GB drive with Full Disclosure)	128 MB RAM (256 MB RAM with ApexPro); 1.44 MB 3.5-inch floppy disk drive, CD-ROM drive, 36.0 GB hard drive (with or without Full Disclosure)
Software Updates	1.44 MB 3.5-inch floppy disk drive, CD-ROM drive	
Serial Outputs	External asynchronous RS-232 serial ports (two)	
Parallel Output	IEEE 1284 Standard	
Video Output	High resolution video board, 1280 x 1024 @ 75 Hz	High resolution video board, 1280 x 1024 @ 85 Hz
Audio Output	GE Medical Systems *Information Technologies* supplied speakers required	

Environmental Specifications (PC)

Environmental Specifications		
	Nightshade	BCM
Power Requirements	Autoranging for either: 100-120 VAC or 200-240 VAC ±10%, 50/60 ±3 Hz 4.6 Amps @ 115 VAC, 2.3 Amps @ 220 VAC	Input Range: 90-264 VAC Auto Selecting Frequency: 47-63 Hz Input Current: 10.0 A @ 115 VAC 60 Hz; 5.0A @ 230VAC 50 Hz
Power Consumption	298 watts (max)	300 watts (max)
Low Voltage Shutdown	90 VAC	33 VAC
Cooling	Forced air	Forced air
Operating Temperature	+10°C to +35°C with minimum rate of change not to exceed 10°C/hour	+5°C to +50°C
Non-operating Storage Temperature	–40°C to 70°C (–40°F to 158°F)	-20°C to +65°C
Relative Humidity	95%, non-condensing at 30°C	10% to 90% (Non-condensing)

Physical Specifications

Physical Specifications		
	Nightshade Server	BCM Server
Height	49.02 cm (19.3 in)	42.17 cm (16.6 inches)
Depth	44.96 cm (17.7 in)	48.0 cm (18.9 inches)
Width	21.08 cm (8.3 in)	20.0 cm (7.9 inches)
Weight	17.1 kg (38 lbs.) minimum 22.9 kg (51 lbs.) maximum	11.3 kg (25 lbs.) minimum 13.1 kg (29 lbs.) maximum

Display Specifications

Display Specifications	
Display Size	17 to 21 inch diagonal, color CRT 18 or 20 inch color flatpanel
Dot Pitch	0.28 mm maximum
Resolution	1280 x 1024 @ 75 Hz
Electrical	
Input Voltage Range	Autoranging for either 90 – 135 VAC/60 Hz, or 180 – 270 VAC/50 Hz
Controls	On/Off, Brightness, Contrast
Environmental	
Operating Temperature	10 to 40°C
Humidity	10 to 95% (non-condensing)

Monitor (Display) Connections

Variety of interconnect video cables available.

Certification

UL/CSA/CE certification as required per the original equipment manufacturer (OEM).

For your notes

B

Supported CIC Pro Parameters

For your notes

Arterial Blood Gas (POC)

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
pH	PH	--	--	--	--	Yes
Partial Pessure CO2	PCO2	--	--	--	--	Yes
Partial Pessure O2	PO2	--	--	--	--	Yes
Bicarbonate	HC03	--	--	--	--	Yes
Temperature	Temp	--	--	--	--	Yes
Base Excess Blood	Beb	--	--	--	--	Yes
Transcutaneous CO2	TCO2	--	--	--	--	Yes
Base Excess Extracellular Blood	Beeb	--	--	--	--	Yes
O2 Staturation	O2Sat	--	--	--	--	Yes
Hematacrit	HCT	--	--	--	--	Yes
Hemoglobin	Hb	--	--	--	--	Yes
Potasium	Ka	--	--	--	--	Yes
Blood Urea Nitrogen	BUN	--	--	--	--	Yes
Sodium	Na	--	--	--	--	Yes
Chloride	Cl	--	--	--	--	Yes
Calcium	Ca	--	--	--	--	Yes
Barometric Pressure	BP	--	--	--	--	Yes
Glucose	Gluc	--	--	--	--	Yes

Arterial Pressure

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Systolic Pressure	Sys	Yes*	Yes	Yes	Yes	Yes
Diastolic Pressure	Dias	Yes*	Yes	Yes	Yes	Yes
Mean Pressure	Mean	Yes*	Yes	Yes	Yes	Yes
Peripheral Pulse Rate	PPR	--	Yes	Yes	Yes	Yes

* - As 1 waveform

BIS Data

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Suppression Ratio	SR	--	Yes	--	--	Yes
Signal Quality Index	SQI	--	Yes	--	--	Yes
Bi-spectral Index	BIS	--	Yes	--	--	Yes
Electromyograph	EMG	--	Yes	--	--	Yes

Cardiac Calculations (Cardiac Calcs)

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Cardiac Output	CO	Yes	Yes	--	--	Yes
Heart Rate	HR	Yes	Yes	Yes	Yes	Yes
Mean Arterial Pressure	MAP	--	--	--	--	Yes
Central Venous Pressure	CVP	--	--	--	--	Yes
Pulmonary Artery Mean	PAM	--	--	--	--	Yes
Pulmonary Artery Wedge	PAW	--	--	--	--	Yes
Body Surface Area	BSA	--	--	--	--	Yes
Cardiac Index	CI	--	--	--	--	Yes
Stroke Volume	SV	--	--	--	--	Yes
Systemic Vascular Resistance	SVR	--	--	--	--	Yes
Systemic Vascular Resistance Index	SVRi	--	--	--	--	Yes
Pulmonary Vascular Resistance	PVR	--	--	--	--	Yes
Pulmonary Vascular Resistance Index	PVRi	--	--	--	--	Yes
Left Ventricular Stroke Work Index	LVSWi	--	--	--	--	Yes
Right Ventricular Stroke Work Index	RVSWi	--	--	--	--	Yes

Cardiac Output (CO)

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Cardiac Output	CO	--	Yes	--	--	Yes
Blood Temperature	BT	--	Yes	Yes	Yes	Yes

Central Venous Pressure (CVP)

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Mean Blood Pressure	Mean	Yes	Yes	Yes	Yes	Yes

Cerebral Perfusion Pressure (CPP)

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Mean Blood Pressure	Mean	--	Yes	--	--	Yes

Continuous Cardiac Output (CCO)

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Systemic Venous Oxygen	SVO2	--	Yes	Yes	--	Yes
Blood Temperature	BT	--	Yes	--	--	Yes
Continuous Cardiac Index	CCI	--	Yes	--	--	Yes
Cardiac Output	CO	--	Yes	--	--	--
Cardiac Index	CI	--	Yes	--	--	--
Systemic Vascular Resistance	SVR	--	Yes	--	--	Yes
Systemic Vascular Resistance Index	SVRi	--	Yes	--	--	Yes
Continuous Cardiac Output	CCO	--	Yes	--	--	Yes
Signal Strength	Signal Strength	--	Yes	--	--	--

CO2 Parameter

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Carbon Dioxide (Expired/Inspired)	CO2e/CO2i	--	Yes	Yes	Yes	Yes
Oxygen (Expired/Inspired)	O2e/O2i	--	Yes	Yes	Yes	Yes

ECG Parameters

Parameter	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
I	Yes	--	Yes*	--	--
II	Yes	--	Yes*	--	--
III	Yes	--	Yes*	--	--
AVR	Yes	--	Yes*	--	--
AVL	Yes	--	Yes*	--	--
AVF	Yes	--	Yes*	--	--
V1	Yes	--	Yes*	--	--
V2	Yes	--	Yes*	--	--
V3	Yes	--	Yes*	--	--
V4	Yes	--	Yes*	--	--
V5	Yes	--	Yes*	--	--
V6	Yes	--	Yes*	--	--
V	Yes	--	Yes*	--	--
HR	Yes	Yes	--	Yes	Yes

* - Excluded are specific alarm types: a) Asystole and b) VFIB/VTAC

- Arrhythmia analysis is done at the bedside device.
- The following are recognized alarm types at the CIC:
  - Asystole
  - VFIB/VTAC
  - Vtach
  - V2>2
  - V Brady
  - Brady
  - Acc Vent
  - R on T
  - Couple T
  - Bigeminy
  - Trigeminy
  - PVC
  - Irregular (including AFIB)

Episodic Temperature

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Temperature	Temp	--	Yes	--	--	Yes*

* - Data presented only as periodic

Femoral Pressure

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Systolic Pressure	Sys	Yes*	Yes	Yes	Yes	Yes
Diastolic Pressure	Dias	Yes*	Yes	Yes	Yes	Yes
Mean Pressure	Mean	Yes*	Yes	Yes	Yes	Yes
Peripheral Pulse Rate	PPR	--	Yes	Yes	Yes	Yes

* - As 1 waveform

Inter-Cranial Pressure

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Mean Pressure	Mean	Yes	Yes	Yes	Yes	Yes

Left-Arterial Pressure

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Mean Pressure	Mean	Yes	Yes	Yes	Yes	Yes

Mass Spec

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Carbon Dioxide (Inspired/Expired)	CO2-I/CO2-E	--	Yes	Yes	Yes	Yes
Oxygen (Inspired/Expired)	O2-I/O2-E	--	Yes	Yes	Yes	Yes
Nitrous Oxide (Inspired/Expired)	NO2-I/NO2-E	--	Yes	Yes	Yes	Yes

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Nitrogen (Inspired/Expired)	N2-I/N2-E	--	Yes	Yes	Yes	Yes
Desflorane (Inspired/Expired)	DES-I/DES-E	--	Yes	Yes	Yes	Yes
Enflurane (Inspired/ Expired)	ENF-I/ENF-E*	--	Yes	Yes	Yes	Yes
Halothane (Inspired/Expired)	HAL-I/HAL-E	--	Yes	Yes	Yes	Yes
Helium (Inspired/Expired)	HEL-I/HEL-E	--	Yes	Yes	Yes	Yes
Isoflorane (Inspired/Expired)	ISO-I/ISO-E	--	Yes	Yes	Yes	Yes
Argon (Inspired/Expired)	ARG-I/ARG-E	--	Yes	Yes	Yes	Yes
Sevane	SEV	--	Yes	Yes	Yes	Yes
No Breath	--	--	--	Yes	Yes	--

* - Enflurane can also be shown as ETH

Non-Invasive Pressure

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Systolic Pressure	Sys	--	Yes	Yes	Yes	Yes
Diastolic Pressure	Dias	--	Yes	Yes	Yes	Yes
Mean Pressure	Mean	--	Yes	Yes	Yes	Yes
Rate	---	--	Yes	Yes	Yes	Yes

Non-Invasive Cardiac Output

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
NonInvasive Cardiac Output	NCO	--	Yes	Yes	Yes	Yes
NonInvasive Pulmonary Capilary Blood Flow	NPCBF	--	Yes	--	--	Yes
NonInvasive Cardiac Index	NCI	--	Yes	--	--	Yes
NonInvasive Cardiac Stroke Volume	NSV	--	Yes	--	--	Yes

Other Cardiac Parameters

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Heart Rate	HR	--	Yes	Yes	Yes	Yes
Premature Ventricular Contraction	PVC	--	Yes	Yes	Yes	Yes

Pulmonary Artery Pressure

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Systolic Pressure	Sys	Yes*	Yes	Yes	Yes	Yes
Diastolic Pressure	Dias	Yes*	Yes	Yes	Yes	Yes
Mean Pressure	Mean	Yes*	Yes	Yes	Yes	Yes
Pulmonary Arterial Wedge	PAW	--	Yes	--	--	Yes

* - As 1 waveform

Pulmonary Calculations

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Fractional Inspired Oxygen	FIO2	--	--	--	--	Yes
Positive end expiratory pressure	PEEP	--	--	--	--	Yes
Respiration Rate	RR	--	--	--	--	Yes
Tidal Volume	TV	--	--	--	--	Yes
Peak Inspiratory Pressure	PIP	--	--	--	--	Yes
Cardiac Output	CO	--	--	--	--	Yes
Barometric Pressure	PBAR	--	--	--	--	Yes
Hemaglobin	Hb	--	--	--	--	Yes
Partial Pressure of CO2 in Arterial Blood,	PaCO2	--	--	--	--	Yes
Partial Pressure of O2 in Arterial Blood Arterial Oxygen Saturation	PaO2	--	--	--	--	Yes
Partial Pressure of O2 in Mixed Venous	SaO2	--	--	--	--	Yes
Systemic Venous Oxygen	SvO2	--	--	--	--	Yes

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Body Surface Area	BSA	--	--	--	--	Yes
Compliance Dynamic	Cdyn(Ced)	--	--	--	--	Yes
Minute Volume	MV	--	--	--	--	Yes
Cardiac Index	CI	--	--	--	--	Yes
Alveolar Arterial Oxygen Gradient	AaDO2	--	--	--	--	Yes
Arterial Oxygen Content	CaO2	--	--	--	--	Yes
Oxygen Delivery Index	DO2I(O2DI)	--	--	--	--	Yes
Mixed Venous Oxygen Content	CvO2	--	--	--	--	Yes
Arterial Venous Oxygen content difference	a-vO2	--	--	--	--	Yes
Oxygen Consumption Index	VO2I(O2CI)	--	--	--	--	Yes
Oxygen Extraction Ratio	O2ER(O2R)	--	--	--	--	Yes
Oxygenation Ratio	Pa/FiO2	--	--	--	--	Yes
Shunt Fraction	Qs/Qt	--	--	--	--	Yes
Fick Cardiac Output	FICKCO	--	--	--	--	Yes

Right Arterial Pressure

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Mean Pressure	BP	Yes	Yes	Yes	Yes	Yes

Respiration Data

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Respiration Rate	RR	Yes	Yes	Yes	Yes	Yes
Respiration Rate-Apnea	RR-APNEA	--	--	Yes	Yes	--

Respiration Mechanics

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Minute Volume (Total, Spontaneous, and Mechanical),	rMV, rMVs, rMVm	--	Yes	--	--	Yes
Tidal Volume (Total, Spontaneous, and Mechanical)	rTV, rTVs, rTVm	--	Yes	--	--	Yes
Peak inspiratory pressure	rPIP	--	Yes	--	--	Yes
Mean airway pressure	Rmawp	--	Yes	--	--	Yes
Positive end expiratory pressure	rPEEP	--	Yes	--	--	Yes
Intrinsic peak end expiratory pressure	rPEEPi	--	Yes	--	--	Yes
Respiration rate (Total, Spontaneous, and Mechanical)	rRR, rRRs, rRRm	--	Yes	--	--	Yes
I:E ratio denominator	rI:E	--	Yes	--	--	Yes
Compliance (dynamic)	rCDYN	--	Yes	--	--	Yes
Resistance (expiratory)	rRAWe	--	Yes	--	--	Yes
Work of breathing (ventilator)	rWOVm	--	Yes	--	--	Yes
Peak Expiratory Flow	Rpef	--	Yes	--	--	Yes

SPO2

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Pulmonary Oxygen Saturation Mean	SPO2	Yes	Yes	Yes	Yes	Yes
Pulmonary Oxygen Saturation Rate	SPO2-R	--	Yes	Yes	Yes	Yes
Pulmonary Oxygen Saturation Mean (from Tram module)	SPO2-M	Yes	Yes	Yes	Yes	Yes
Pulmonary Oxygen Saturation Rate (from Tram module)	SPO2-M-R	--	Yes	Yes	Yes	Yes

Special Pressure

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Mean Pressure	Mean	Yes	Yes	Yes	Yes	Yes

ST Parameter

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
I	--	--	Yes	Yes	Yes	Yes
II	--	--	Yes	Yes	Yes	Yes
III	--	--	Yes	Yes	Yes	Yes
AVR	--	--	Yes	Yes	Yes	Yes
AVL	--	--	Yes	Yes	Yes	Yes
AVF	--	--	Yes	Yes	Yes	Yes
V1	--	--	Yes	Yes	Yes	Yes
V2	--	--	Yes	Yes	Yes	Yes
V3	--	--	Yes	Yes	Yes	Yes
V4	--	--	Yes	Yes	Yes	Yes
V5	--	--	Yes	Yes	Yes	Yes
V6	--	--	Yes	Yes	Yes	Yes
V	--	--	--	--	--	Yes

SvO2

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Oxygen Saturation	SVO2	--	Yes	Yes	Yes	Yes
Signal Strength	“*” notation	--	Yes	--	--	--

Transcutaneous CO2

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Transcutaneous Carbon Dioxide	tcCO2	--	Yes	--	--	--
Transcutaneous Oxygen	tcO2	--	Yes	--	--	--
Temperature	temp	--	Yes	--	--	--
Power	power	--	Yes	--	--	--
Timer	timer	--	Yes	--	--	--

TramModule Transcutaneous CO2

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Transcutaneous Carbon Dioxide	tcmCO2	--	--	--	--	Yes
Transcutaneous Oxygen	tcmO2	--	--	--	--	Yes
Temperature	mtemp	--	--	--	--	Yes
Power	mpower	--	--	--	--	Yes

Temperature

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Temperature 1	Temp1	--	Yes	Yes	Yes	Yes
Temperature 2	Temp2	--	Yes	Yes	Yes	Yes

Umbilical Pressure (UAC)

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Systolic Pressure	Sys	Yes*	Yes	Yes	Yes	Yes
Diastolic Pressure	Dias	Yes*	Yes	Yes	Yes	Yes
Mean Pressure	Mean	Yes*	Yes	Yes	Yes	Yes
Rate	Rate	--	Yes	Yes	Yes	Yes

* - As 1 waveform

Umbilical (UV, UVC)

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Mean Pressure	BP	Yes	Yes	Yes	Yes	Yes

Ventilator Data

Parameter	Abbreviation	RT Waveforms	RT Numerics	Settable Alarming	Settable Limits	Historical Trending
Positive End Expiratory Pressure	PEEP	--	Yes	Yes*	--	Yes
Fraction of Inspired Oxygen	FiO2	--	Yes	Yes*	--	Yes
Peak Inspiratory Pressure	PIP	--	Yes	Yes*	--	Yes
Mean Airway Pressure	MAWP	--	Yes	Yes*	--	Yes
Ventilator Rate	VNT-RR	--	--	Yes*	--	Yes
Flow Rate	FLW-RT	--	--	Yes*	--	Yes
Inspiratory Time	INSP	--	--	Yes*	--	Yes
Inspiratory: Expiration Ratio Denominator	I:E	--	--	Yes*	--	Yes
Sensitivity	SENS	--	Yes	Yes*	--	Yes
Respiratory Rate	PT-RR	--	Yes	Yes*	--	Yes
Plateau Pressure	PPLAT	--	Yes	Yes*	--	Yes
Inspiration Hold Time	IN-HLD	--	--	Yes*	--	Yes
Positive Pressure Support	PPS	--	--	Yes*	--	Yes
Exhaled Tidal Volume	TV	--	Yes	Yes*	--	Yes
Minute Volume	MV	--	Yes	Yes*	--	Yes

* - Single ‘Vent’ Alarm for all parameters

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